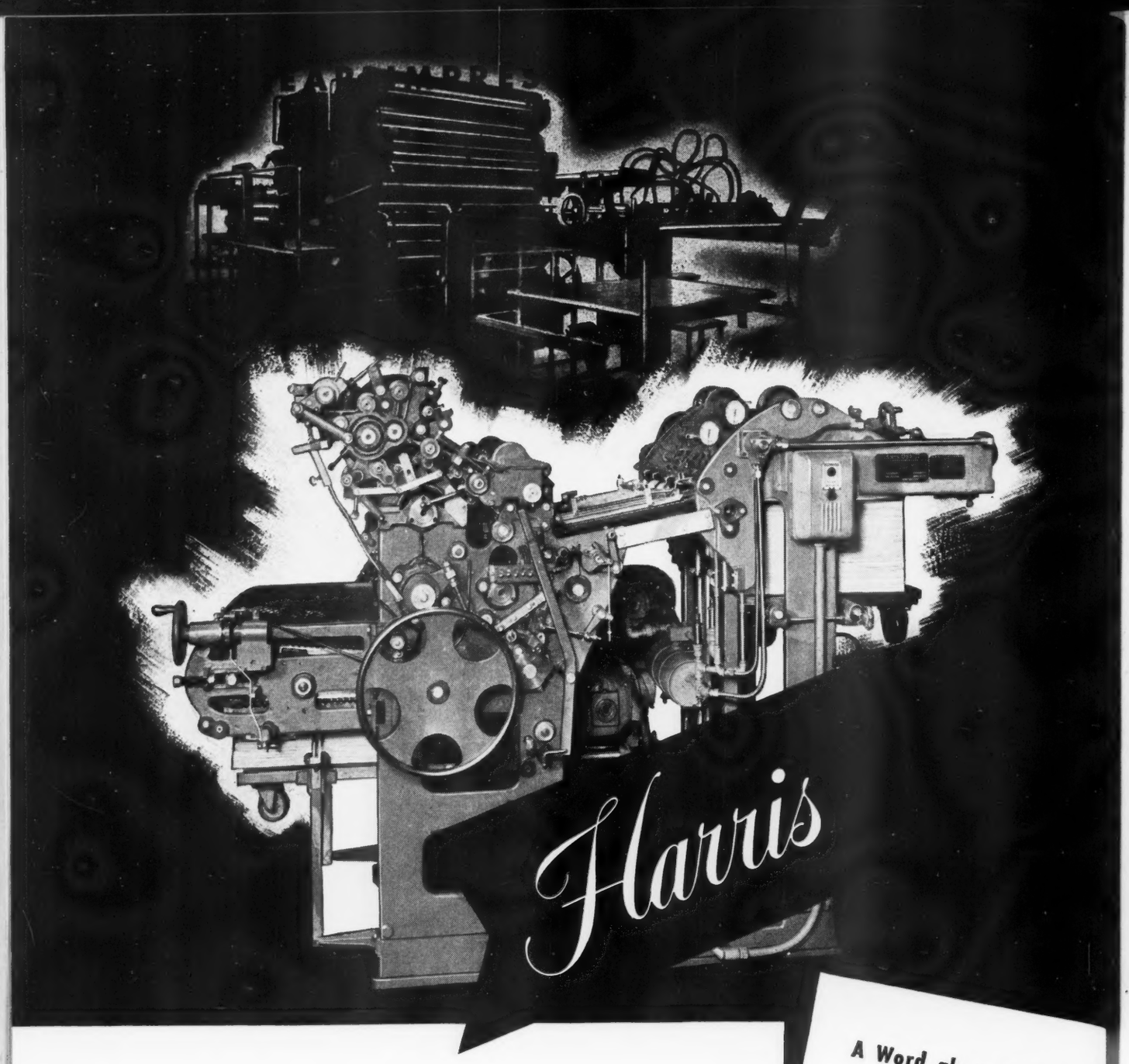
PRINTING EQUIPMENT



Dependable ink distribution has always been a distinctive characteristic of Harris offset presses. Now this all-important feature has been attained to a new high degree in a 17 x 22. Four form rollers distribute a uniform film of ink; there are 20 rollers between the fountain and the plate. Thus, high color density and sharp, clear impressions are assured. Dependable ink distribution represents but one of many exclusive advantages to be found on the new Harris 17 x 22.

A Word about Deliveries

In spite of the heaviest manufacturing program in Harris history, tentative shipping schedules are filled for many months, based on "Purchase Proposals" now on hand. If you are planning to buy a Harris-Seybold machine, please forward your notification now. Date of its receipt will determine your scheduled position. Do *not* expect early delivery. Harris-Seybold-Potter Company, General Sales Offices, Cleveland 5, Ohio.

HARRIS·SEYBOLD

YOUR DRY MATS ARE ALWAYS "UNDER CONTROL" WHEN YOU USE A STA-HI MASTER FORMER

There is no guesswork as to what the result is going to be when you place a molded page mat in a Master Former. The machine is tailor-made to do the job you want, and each and every dry mat comes out uniformly, ready to go into the casting unit. Once the mat is properly positioned and the Vacuum Chamber is closed, the machine "takes over" and the entire operation is automatic, requiring no attention from the operator. And every important factor in this most important processing of the mat is controlled . . . the amount of heat, the amount of vacuum, the length of time for both the preliminary vacuum-shrinkage cycle and the overall electric baking and forming period.

CONTROLLED HEAT is achieved by two thermostats, one regulating temperature of heat applied to the face of the mat and the other maintaining the proper heat on the back of the mat. These thermostats can be quickly adjusted to meet any conditions.

CONTROLLED VACUUM is obtained by setting a vacuum relief valve to the desired maximum amount found to be most satisfactory for your particular mats. The machine thereafter automatically applies this amount of vacuum in each operation, eliminating all buckles, sinks and other mat distortions.

CONTROLLED TIMING is effected by means of electronic time delay relays, one for the vacuum-shrinkage period and one for the time of the overall operation. These times can likewise be changed in a matter of seconds should conditions make this necessary. These timers act as the "brains" of the machine and unerringly direct all its automatic functions.

CONTROLLED SHRINKAGE is the result of the right amount of heat applied as needed, with the right amount of vacuum, for the right length of time to meet your particular requirements and routine. And you achieve all these results in a Sta-Hi Master Former.

Close to 300 Master Formers are now in operation or on order for delivery this year. In newspaper plants both large and small, the machines themselves, day after day, are proving the superiority of this precision-engineered equipment.

STA-HI CORPORATION

1020 Crocker Street **Los Angeles 21, California**

"KORKER"

PRINTING PRESS BLANKET

HERE'S proof that KORKER is a corker among printing press blankets—from the men who know printing best. We had press-room oldtimers test the new KORKER blankets on every type of printing, on every type of printing equipment.

Summed up, here's what they think of the new printing press blanket which was actually developed several years ago but held up until the right materials were available:

1. KORKER has greater resiliency. (*That's because it has many more air cells per square inch.*)

2. KORKER lasts longer. (*Tough, tested fabric supports the cork construction preventing work-through to surface.*)

3. No creep, no stretch, no bolster. (*Degree of resilience is scientifically controlled to prevent receding from original thickness.*)

4. KORKER adheres perfectly to drawsheet. (*Fabric surface is especially designed for this purpose.*)

5. KORKER gives better reproductions with less wear on plates. (*Sorry to repeat but it's that controlled resiliency again.*)

6. KORKER prints solids stronger, screens cleaner with less impression. (*Korker maintains an even guage assuring sharp reproductions. What's more, it accepts normal plate irregularities and gives long service on high speed presses.*)

Ask your Tingue, Brown representative to show you KORKER today. He can also show you a complete line of blankets and drawsheets to meet every press condition. No matter what you print, or on what type of equipment, it will pay you to investigate the Tingue, Brown line.

Cushion Cork, Tingucork, Foundation, Wool Felt, Improved Satisfaction, Gold Tympan Cloth, Top Combino.

TINGUE BROWN AND COMPANY

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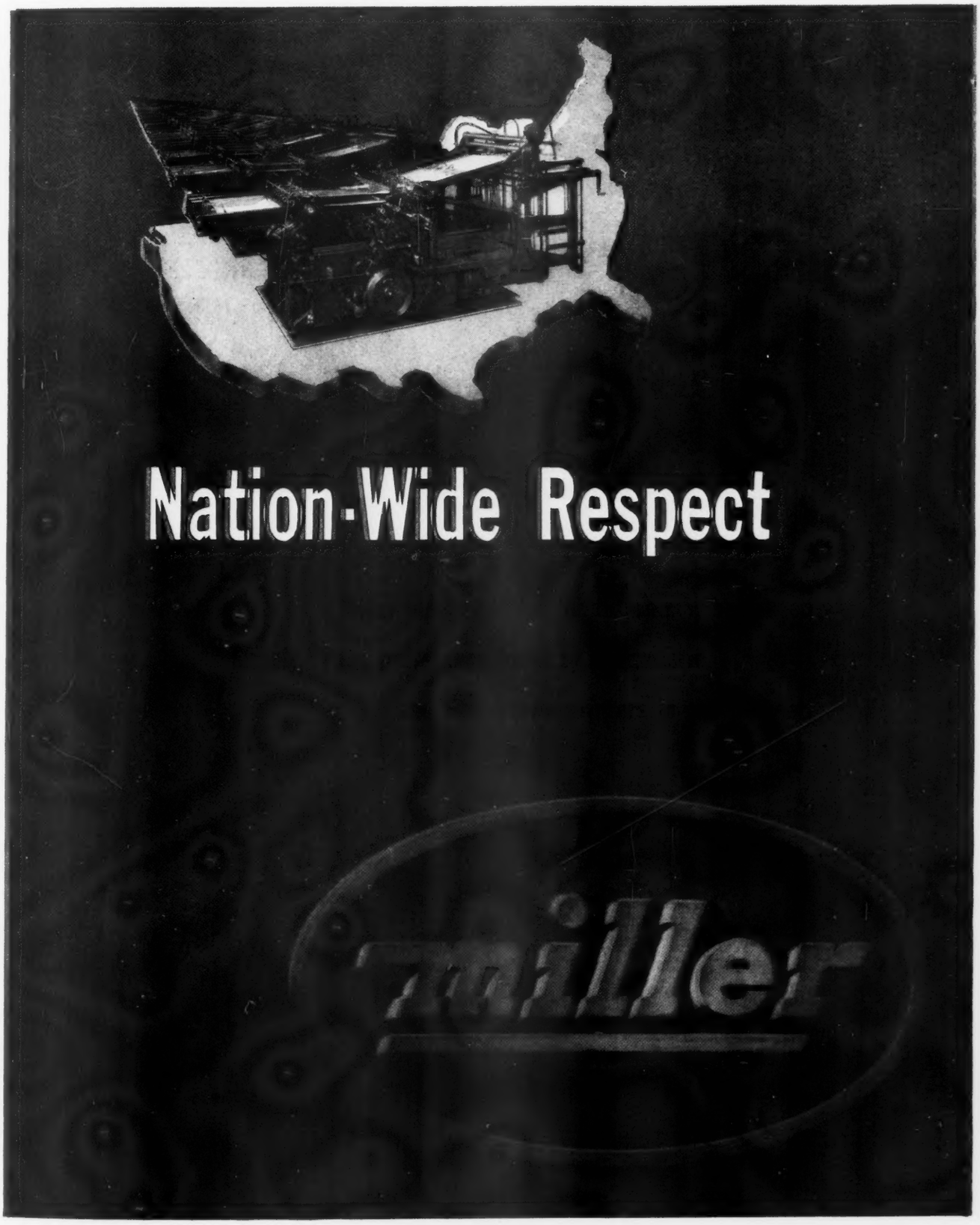
723 E. WASHINGTON BLVD., LOS ANGELES 21, CAL.
507 PETERS STREET, S. W., ATLANTA, GEORGIA

CANADIAN SALES AGENTS
ROSS WHITEHEAD & CO., LTD.
MONTREAL CANADA

The wartime statement reprinted below is confirmed further by the fact that 69% of orders now being received for new Miller Automatics are from users of Miller equipment—a list of which would read like a "Who's Who" in the printing industry.



SAM'L BINGHAM'S SON MFG. CO.

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PRINTERS ROLLERS

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FOR EVERY PRINTING PURPOSE

WE ARE NOW MAKING COMPOSITION ROLLERS

FOR WINTER USE

SHIP YOUR OLD ROLLERS

TO FACTORY MOST CONVENIENT TO YOU

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CHICAGO 5	DETROIT 10	KANSAS CITY 6	PITTSBURGH 3
CLEVELAND 14	HOUSTON 6	MINNEAPOLIS 15	ST. LOUIS 2
DALLAS 1	INDIANAPOLIS 2	NASHVILLE 3	SPRINGFIELD, O.

Roller Makers since 1847

PRINTING EQUIPMENT *Engineer*

Volume 71 Number 5

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

PRINTING EQUIPMENT Engineer, Published monthly at 1276 West Third St.; Cleveland 13, Ohio, Copyright 1946 by Willsea Publishing Co.

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★

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STANDARD BOOK ON ESTIMATING for PRINTERS—By Fred W. Hoch. Revised 1941 edition. This book is a primer for students and a reference for printers and estimators. Every printing plant should have a copy. Author explains all operations in commercial printing plant and shows production time allowance for each in hours and decimal hours. Size, 6 in. by 9¼ in., 268 pages, $3.75 per copy, cash with order.

PRINTING INKS—Their Chemistry and Technology—**By Carleton Ellis.** Bound in cloth, 6 in. by 9½ in., 560 pages, well illustrated. For printing executives, pressmen, photo-engravers, platemakers, ink manufacturers, chemists, paper-makers. Author stays close to printing plant. The solving of new production problems brought about by technological improvements, both in equipment and inks, created the urgent need for this book. Price $7, cash with order.

THE PRACTICE OF PRESSWORK—By Craig R. Spicher. We offer copies to our readers, at the special price of $4.00 per copy, cash with order. No printer should be without a copy (9000 copies printed).

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HOW TO ADJUST WORK-UPS—By Wm. H. Lichter and Geo. F. Smalley. Booklet consists of 24 pages in which are analyzed and remedies are given for prevention and/or elimination of work-ups. Material written as result of actual plant experience. Size, 5¼ in. by 7¼ in. Price, $1 per copy, cash with order.

HANDBOOK FOR PRESSMEN—By Fred W. Hoch. Book written by authority on all phases of flat-bed letterpress production for the practical pressman. Contains 248 pages, 26 illustrations and 24 charts, $3 per copy, cash with order.

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Please Note: All books orders must be accompanied by remittance . . . . This is necessary because of narrow handling margin allowed.

PRINTING EQUIPMENT *Engineer*

1276 W. 3 St., Cleveland 13, Ohio

RANGE

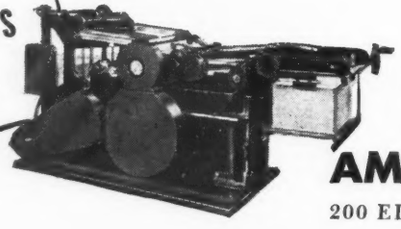
...of work an ATF Kelly will handle is limited only by the size of the press. All ATF Kellys are designed to meet the needs of the commercial printer... for high-quality production of run-of-the-hook or fine color work... at high speeds. Add to these factors the Kelly's unsurpassed evenness of distribution, quality of impression, and accuracy of hairline register... and you have the answer to the Kelly's increasing popularity.

You can have a Kelly or any other ATF press reserved now for delivery when production is resumed. Ask the man who represents ATF about the ATF Civilian Priority Delivery Plan, or write to us direct.

DO YOU have a "balanced" shop?

ATF Kellys and ATF Chief Offset presses make an ideal team for the modern printer. Future demand will be for letterpress and offset in combination. If you are thinking about offset now, send for a copy of "Offset Answers"

ATF Kelly
The PRINTER'S printing press



ATF

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200 ELMORA AVENUE, ELIZABETH B, NEW JERSEY

• Ludlow *Tempo* was planned and designed to meet all possible requirements of a sans-serif letter, and its usefulness in modern typography was established long ago. A geometric design of real distinction, it has made its own place among typefaces of universal appeal and permanent value.

• *Tempo's* usefulness to the discriminating printer, typographer and advertiser is evidenced by its increasing popularity. *Tempo* typefaces are efficient tools which help to build profitable business.

• The value of any modern typeface family increases as its scope widens. Ludlow *Tempo* now comprises

Light & Italic

Medium and Medium Italic

Tempo Medium Condensed

Bold and *Bold Italic*

LUDLOW TEMPO

fourteen attractive series, offering a wide selection of faces, sizes and weights, from the dainty yet effective display value of *Tempo* Light to the bold, smashing appeal of *Tempo* Black. Complementary italic and condensed faces are included.

• The Ludlow *Tempo* family affords the printer every facility for producing brilliant and effective commercial and miscellaneous composition and advertising typography that literally compels attention.

• Specimen sheets showing the complete size range of any of the *Tempo* series will be gladly sent you on written request, without any obligation.

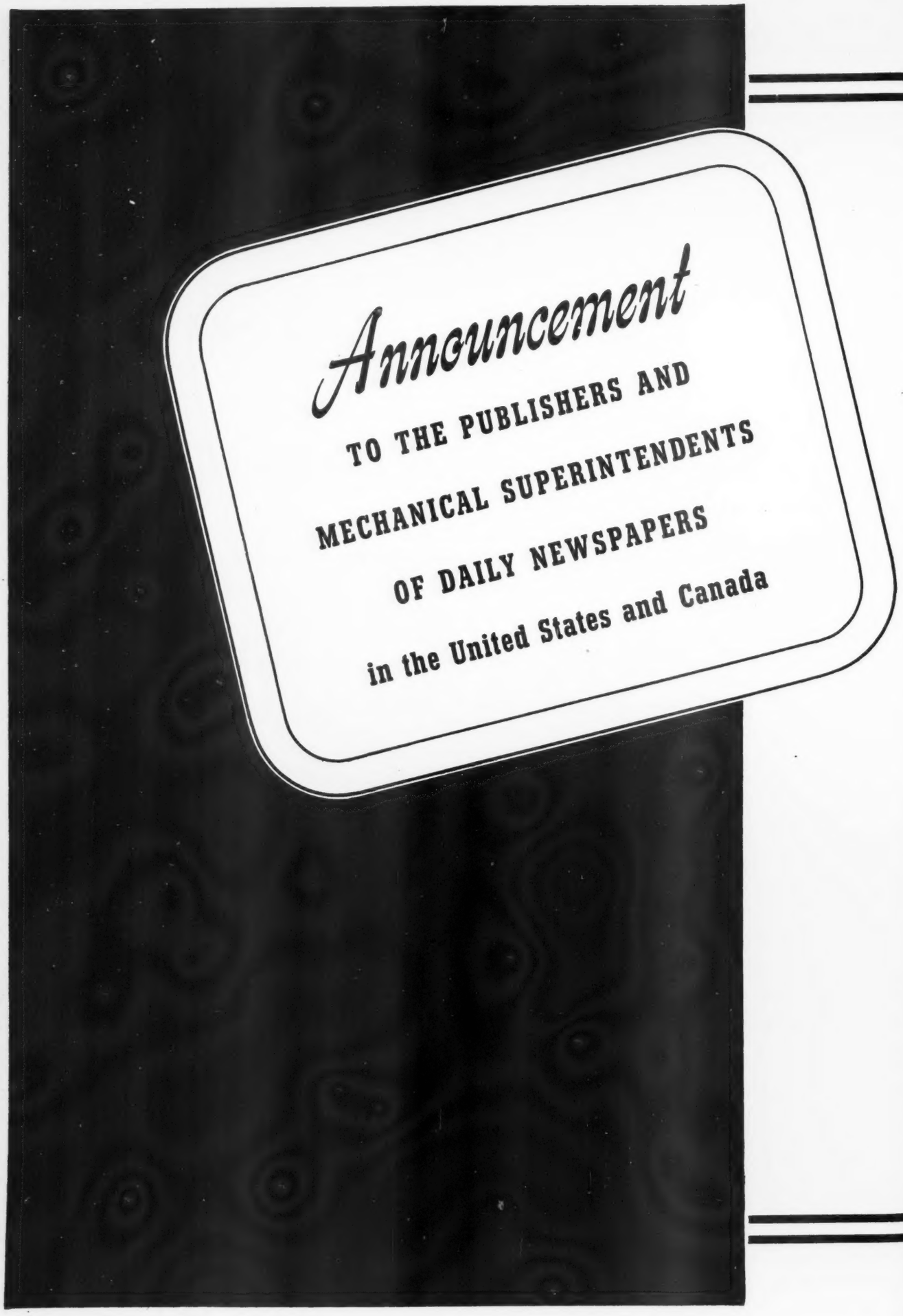
Tempo Bold Condensed

Heavy Condensed *and Italic*

Heavy and *Heavy Italic*

Black & INLINE

LUDLOW TYPOGRAPH COMPANY
2032 Clybourn Avenue, Chicago 14, Illinois


Announcement
TO THE PUBLISHERS AND
MECHANICAL SUPERINTENDENTS
OF DAILY NEWSPAPERS
in the United States and Canada

TO YOU who have been expecting a statement of reconversion policy from Wood, as a guide in planning your own long-term equipment program, we are happy to make this announcement:

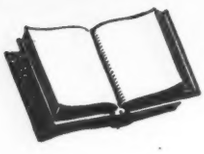
* * *

As you know, 4 years of war assignments completely pre-empted Wood's resources. However, smooth and rapid reconversion has been effected, and much badly-needed equipment is now being completed.

The Wood Press for the St. Louis Post-Dispatch, which includes the new Wood 4-color units, is rapidly nearing completion. We are sparing no effort to put it into actual operation during 1946.

This press was, of course, fully designed, engineered, and partially constructed *before* Pearl Harbor. It incorporates a whole series of advanced techniques for accurate, high speed daily newspaper production in black and white and in full color.

We have deliberately refrained from advertising the ideas and far-reaching improvements built into this press, because in a relatively short time, you will be invited to observe its actual operation, judge for yourself its value and importance to newspaper publishing, and shape your own program accordingly. Wood Newspaper Machinery Corporation, Plainfield, N. J. Executive Offices: 501 Fifth Ave., New York 17, N.Y.



In BLACK and WHITE, HUBER RESOURCE-fulness STANDS OUT!

BURNING through millions of tiny jets, natural gas from Huber's own wells in Texas produces the soot called carbon black—the essential pigment of high-grade Huber news and publication inks. From these same "hot houses"—with the aid of Huber scientific research—came a specially developed carbon black for our Government's synthetic rubber program. Millions of tires that rolled along—to Victory—were made with Huber's famous WYEX Carbon Black, the official control pigment for all Government Rubber (GR-S) Production.

Carbon Black is but one of Huber's basic resources that makes possible the consistently high quality of Huber Inks. Because Huber, unique among ink manufacturers, controls most of its own raw materials *from the ground up*, Huber quality is recognized everywhere.

We are eager to share the benefits of wartime experience and research with the printing industry. Tomorrow, as in the past, count on Huber *resource*-fulness for the finest printing inks—color, as well as black.

J. M. HUBER, INC. *New York; Chicago; St. Louis; Boston; Huber, Ga.; Graniteville and Langley, S. C.; Borger, Texas.*

PRINTING INKS, PETROLEUM, NATURAL GAS AND GASOLINE, CARBON BLACKS, KAOLIN CLAYS, RUBBER CHEMICALS.

HUBER

The Inherent Advantages of Monotype Single-Type Composition

The Monotype owner can place at the service of the buyer of printing and advertising not only the economic advantages of machine typesetting in sizes from 4 to 18 point, but he can do so without sacrificing the advantages inherent in the use of single-type composition. The Monotype owner can give to each typesetting task whatever the nature of the work may require.

Close Fitting

The close fitting of all faces composed on the Monotype Typesetting Machine is the natural result of casting each letter on its own body, independent of other letters or characters. *Monotype italics, in particular are closely fitted.*

Letter Spacing

Uniformity of letter spacing in all measures, *especially narrow columns*, is an advantage available only on the Monotype. When done by the operator at the keyboard the same space is automatically and uniformly added to the width of the body of each character as the type is cast.

Exact Height and Point Size

The height-to-paper and point-size of body of each character in Monotype single-type composition are determined by one factor only—the dimensions of the mold opening. Therefore it necessarily follows that each and every type will be the same exact height and point size over the entire length of the line. *This feature greatly reduces make-ready time.*

225 Matrices in Die-Case

The Monotype die-case contains spaces for 225 matrices. These may be made up of a variety of combinations of light and bold roman, italics, small caps, with special characters to meet the requirements of the work in hand.

"Opening Up" Faces

The normal set size of each type face composed on the Monotype Typesetting Machine may be made either wider or narrower. Thus, type faces may be made to fit more closely than normal by reducing the width of the body, or "opened up" by increasing the set-width of the body on which each character is cast and thus adding to the white space between letters.

Universal Justification

In the Monotype method of single-type composition the width of body of each and every character is fixed and invariable and is known to the operator at the keyboard. Thus it is possible to set several different word or figure columns in the same line, each column being completely justified within itself and independent of the others.

Economical Corrections

Corrections of Monotype single-type composition are easily and quickly made. Characters are removed or changed by hand or the matter is reset at the machine, whichever is the most economical or expedient at the time the work is done. It is thus not necessary to reset an entire line to make a simple correction in Monotype composition; nor is it necessary to change matrices, molds and measures when corrections are made by hand using type in cases.

LANSTON *Monotype* MACHINE COMPANY

PHILADELPHIA 3
24th and Locust Streets

NEW YORK 17
441 Lexington Avenue

CHICAGO 6
216 W. Jackson Boulevard

BOSTON 10
170 Summer Street

ATLANTA 3
116 Spring Street, N. W.

SAN FRANCISCO 5
55 New Montgomery Street

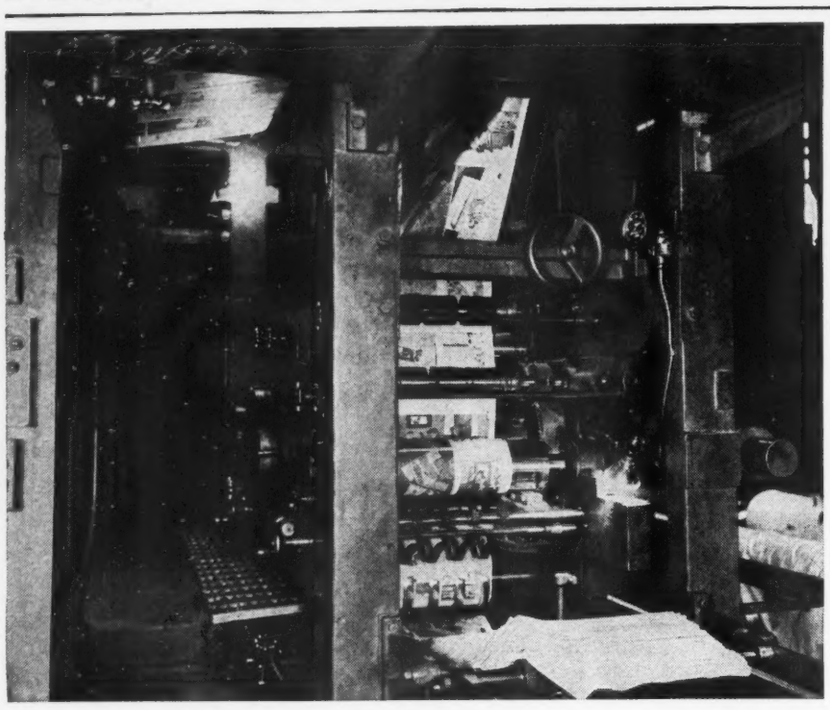
MONOTYPE COMPANY OF CANADA LTD.
34 Adelaide Street West, Toronto 1, Ont., Canada

Composed in Monotype Baskerville, No. 353; Monotype Baskerville Bold, No. 453 and Monotype Artscript, No. 225

KEEPING IN TOUCH

PREPARED BY INTERNATIONAL PRINTING INK DIVISION OF INTERCHEMICAL CORPORATION • FEBRUARY, 1946

NEWSPAPERS TO USE MULTI-COLOR OFFSET? TRENTON TIMES MAKES FIRST RUNS WITH NEW PRESSES



Four Manufacturers Collaborate to Make Press, Inks, Heater, Paper

High-speed, four-color offset printing for newspapers? That's what the Trenton Times thinks is coming.

The first press of its kind to produce this type of work is installed and running at the Times press in Trenton, N. J. R. Hoe & Company, Inc., designed the press, which uses special instant-drying lithographic ink made by—you guessed it—International Printing Ink.

Two other manufacturers helped make this innovation possible. The Selas Corporation of America produced a drying unit which heat-sets the inks as the web passes from the last cylinder to the roller. West Virginia Pulp and Paper Company developed paper which is particularly suited to the high-speed color lithography.

It all started when Thomas J. Kerney and Don A. Johnson of the Times began experimenting with color reproduction processes to produce a 32-page Sunday supplement. The final result was the new press set-up, which prints four colors on both sides of the web SIMULTANEOUSLY at a speed of 800-900 feet per minute.

The inks used are of the IPI Vapolith type, compounded with special properties for this particular job. Trial runs have been made on a variety of jobs on several commercial type stocks.

If you'd like more details on this unique application of offset color printing, drop us a line and we'll be glad to give you more information. International Printing Ink Division of Interchemical Corporation, 350 Fifth Avenue, New York 1, N. Y.

COME AND GET IT

Sure, we like to get inquiries from our advertising. And we try to fill all requests promptly. But this one had us stumped. It was a card addressed to "Internashiona l Printing Co." which read: "Gentlemen: Please send me printing ink." That's all there was to it. So to the sender we say, "Drop around for a carload sometime."

OLD FRIENDS ARE BEST

The other day one of our salesmen called on a New York printer. (No news so far.)

"Say," said the customer, "I'm using an old can of your ink I found this morning on a job that's running now. It's working swell."

Examination of the can revealed it was made by IPI on March 10, 1931! It still hadn't dried up or livered. We don't recommend that you hoard your ink that long, but apparently, if you do, you can still depend on IPI to do your job for you.

IPI ESSAY CONTEST ATTRACTS MANY ENTRIES FROM STUDENTS

Entries poured in from all parts of the country for the Tenth Anniversary IPI Contest on the subject "Printing and World Peace".

All high school students enrolled in printing classes were eligible to take part in this contest, which offers special grand prizes as a tenth anniversary feature.

This year's judges are: Harry Gage, Vice President, Mergenthaler Linotype, Chairman; C. R. Conquergood, President, Canada Printing Ink Company, Ltd.; George Fielding Eliot, Military Commentator; W. E. Griswold, Executive Director, Lithographic Technical Foundation, Inc.; Frederick J. Libby, Executive Secretary, National Council for Prevention of War. Winners from the 6,000 entrants will be announced as soon as the judges can make their selections.

FEDERATED Process Type Metals *Cast Smoothly*

Federated *Process* Type Metals are clean, possess excellent fluidity and will produce slugs and type of solid body and sharp face.

Clogging of type casting machinery is caused by dross. Less dross means less build up. The Federated patented process assures a low drossing type metal essential to trouble-free operation. Dross accumulation in the shop will be at a minimum.

Clean metal, both original and replacement stock, will permit a greater latitude in operating conditions, longer metal life and lower cost.

Our metal and service are at your command.

FEDERATED
PROCESS TYPE METALS

- **LINOTYPE**
- **MONOTYPE**
- **STEREOTYPE**
- **INTERTYPE**
- **ELECTROTYPE**
- **COMBINATION**
- **SPECIAL ALLOYS**
- **COPPER ANODES**
- **MOR-TIN-METAL (an adjusting alloy)**
- **SAVEMET (a compound for recovering metal from dross)**

• Available in bars, ingots, pigs or in standard feeder form. Prompt delivery. Dross drums furnished free of charge. F.O.B. refineries.

• The methods used in the manufacture of Federated process type metals are protected by U. S. Government patents.

FMD

Federated

METALS DIVISION

AMERICAN SMELTING and REFINING COMPANY

120 BROADWAY, NEW YORK (5) N. Y.

Nation-wide service with offices in principal cities

DUPLEX

FLEXIBILITY TO MEET VARYING DAILY NEEDS . . . AND FUTURE EXPANSION

Wide variations in quantity — any even number of pages, from 2 up — easy operation in any combination of units and folders — lower costs and greater production versatility — are some of the many advantages of the Duplex Unitubular Press. Unitubulars are tailored to fit the space availibilities of any newspaper plant. Flexibility is a keynote of the pioneering Duplex line that ranges from flat beds to large metropolitan semi-cylindrical presses. Regardless of your problem, Duplex engineers are prepared to help you solve it. Behind them lies 62 years of trail-blazing during which Duplex originated and patented every standard type of newspaper press in use today.

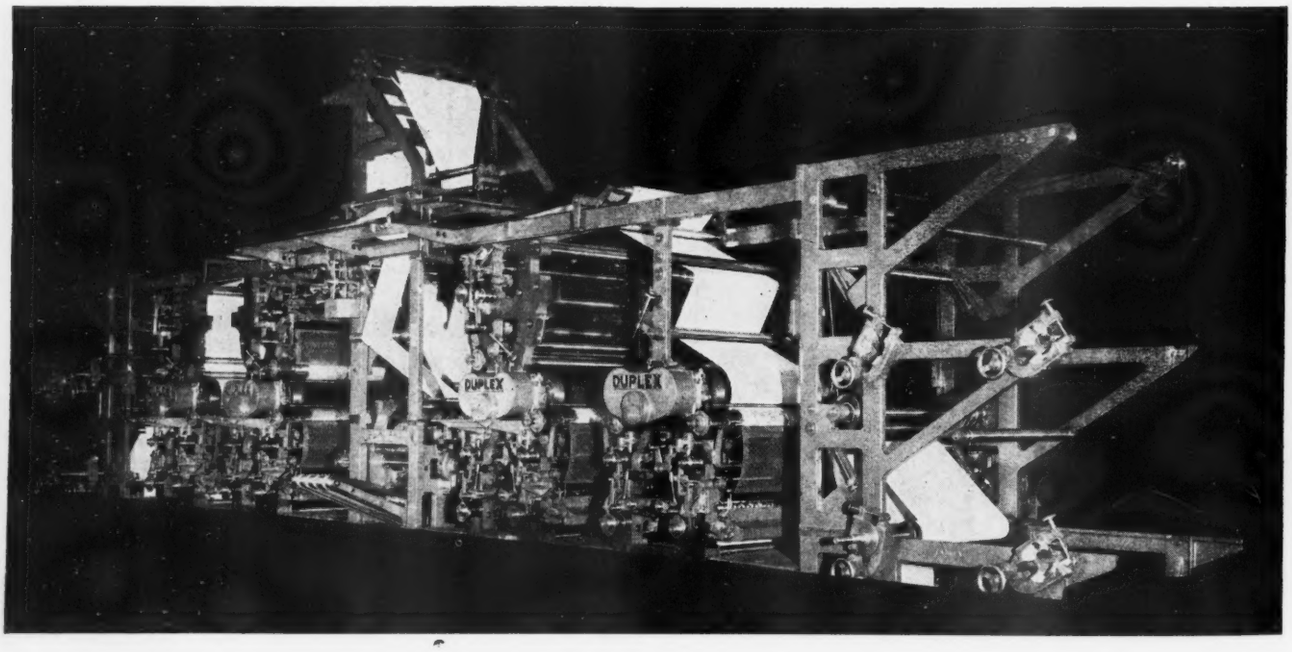
THE DUPLEX PRINTING PRESS COMPANY

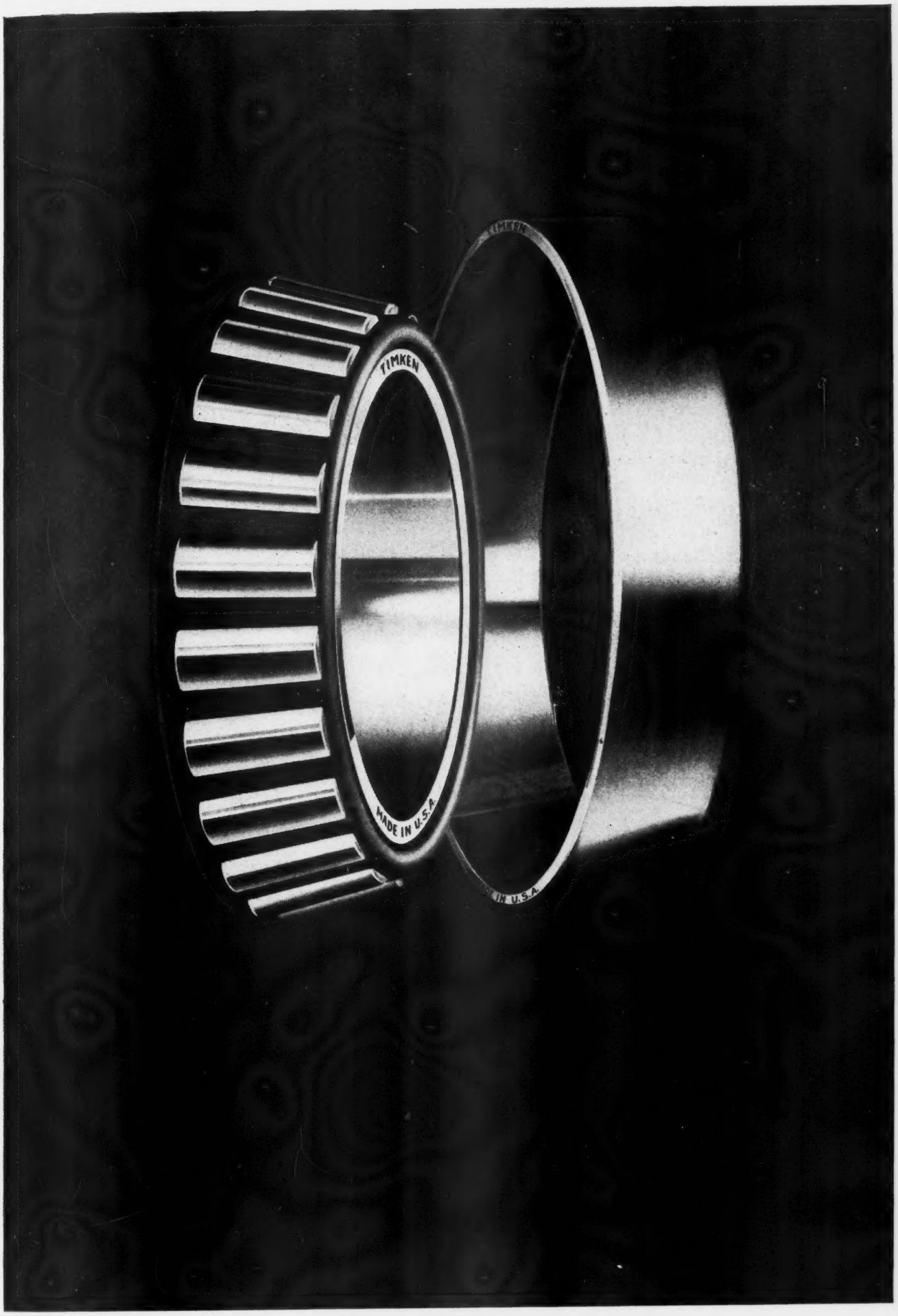
Builders of the World's Finest Newspaper Presses

BATTLE CREEK, MICHIGAN

77 W. Washington Street, Chicago — 500 Fifth Avenue, New York

DUPLEX UNITUBULAR PRESS: This is a four unit, 16-page Unitubular, with color cylinders over the two center units, balloon former, rolls at end. Just one of many arrangements possible. Unitubulars are easy to run — no climbing, no reaching, no difficult web leads, all adjustments conveniently located. A minimum of lifting. The print is in full view while setting color — no webs passing over fountains to interfere with their adjustment and cleaning.




TIMKEN
MADE IN U.S.A.

INTER-COMPANY CORRESPONDENCE

FROM JBL

TO TQS

Re: MATRIX CONTRAST SERVICE

Ted:

You asked me to give you a written report on the Black & White treated matrices after sixty days use. Here's a itshell of my findings:

1. The Matrix Contrast Service has reduced errors considerably . . . as nearly as I can figure . . by approximately one-third.

2. The operators strongly endorse it. It makes it possible for them to "see what they set" without eyestrain, and to make corrections in the assembly before lines are cast.

3. Its cost is small . . . especially as compared to the increase in efficiency it has effected.

To summarize, Black & White has my unqualified recommendation. Your decision to install it has been a big boon to the composing room.

The matrices you now have are the ones we treat. It's not necessary for you to buy new matrices; however, if you do, your contract will cover these additional matrices. There's no better time than now to install Black and White. You will benefit just as greatly from Matrix Contrast Service as do other printing plants all over America.

BLACK & WHITE

MATRIX CONTRAST CORPORATION

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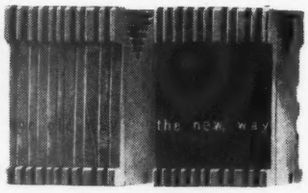


EUROPEAN AGENTS: FUNDITOR, LTD., 3, WOODBRIDGE STREET, CLERKENWELL GREEN, LONDON, E.C.1

This picture was printed direct from a set of four-color process nickeled stereotype 11 pt. flat plates made by E. L. Geiger, of Geiger Stereotype Co., Dayton, Ohio. The Geiger plant is engaged exclusively in making stereotype plates and mats for the trade. The original photo-engraved copper plates from which this subject was taken are reproduced by permission of The Tappan Stove Company. The plates from which this picture has been printed were mounted on wood base. In presenting this subject, Mr. Geiger stated: "We have selected an average subject rather than to show a picture to be printed as a stunt."

Cabbage Rose to Hybrid Tea

—Through research and development work stereotype plates for commercial work have moved into hard packing field—Technique of modern stereotyping discussed

By E. L. GEIGER*

Manager, Geiger Stereotype Co., Dayton, Ohio.

THE important reason for research in and development of the commercial stereotype plate is speed and economy of production. With development of the direct pressure molding press and the clay-based matrix, the platemaking picture has been changed and the nickel-surfaced curved and flat commercial stereotype has moved into the hard-packing press field.

Many printing executives have been under the impression that making plates by stereotyping is exclusively a newspaper process. In newspaper work, rapid production is imperative and the time element dominates operations.

With the usual dry flong and the newspaper mat roller 65 to 85 line halftones are about the limit for screen fineness in practical newspaper production. But with the direct pressure molding press and clay-based matrix, 120 to 133 line screen copper photo-engravings are being stereotyped and print excellently.

To give an idea of the adaptability of the stereotype plate, our products include stereotypes, both curved and flat, for printing magazines, folding cartons, bread wrappers or any wax paper product, ruled forms, embossing dies, news-

The Principle of Stereotype Mat Pre-Makeready

Explaining stereotype mat halftone pre-makeready technique as practiced in some stereotype plants isn't easy because of the element of skill required. The work is exacting and must be done properly. Otherwise, this type of pre-makeready should not be attempted. The reason is obvious. If not done properly, a slurring effect will be obtained. There are a number of mat pre-makeready methods. The one described here will give a general idea about the effects to be secured. We will try, roughly, to give some idea of one method so that our readers who are not familiar with it may grasp the principles. Mat pre-makeready is the equivalent of pressroom makeready with this difference—the pre-makeready is put into the mat to cause the solids and highlights to be at different printing levels in the finished plate.

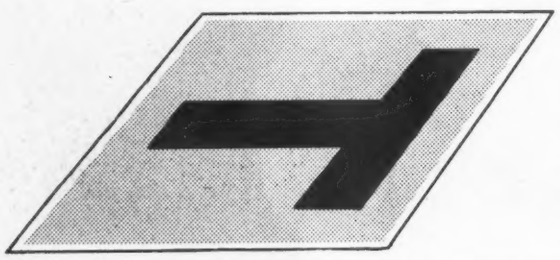


Fig. 1.—We will assume that a photo-engravers' halftone is to be reproduced in stereotype plate form. For pre-makeready purposes, two proofs of the original halftone plate are taken with black ink on paper. This paper may be 0.006 in. thick. Red rag (20 lb.) frequently is used for underlaying mats. In the sketch shown above we will assume that the capital T is a solid and the entire area surrounding the capital T is 120 line screen halftone. With a sharp knife, the capital T is cut from each of the two proofs which have been taken on the 0.006 in. paper.

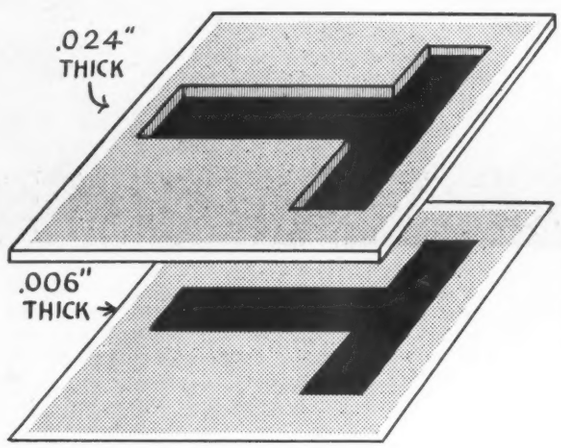


Fig. 2.—Here is shown the mat (upper) which has been molded from the photo-engraved plate. Immediately underneath is the proof shown in Fig. 1 out of which the capital T has been cut. The proof will be cemented to the underside of the mat so the capital T cut-out area will be in register with the capital T solid area in the mat.

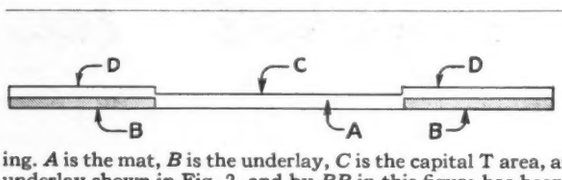


Fig. 3.—Cross-section diagram of mat shown in Fig. 2 with the proof cemented to the underside after molding. *A* is the mat, *B* is the underlay, *C* is the capital T area, and *D* is the halftone area. The underlay shown in Fig. 2, and by *BB* in this figure has been compressed fron 0.006 in. to about 0.003 in. under pressure of the molding press. The capital T area *C* will cast in the plate at approx. 0.003 in. higher printing level than the halftone area *D* in the plate. The mat is now ready to be placed in the casting box for pouring the plate.

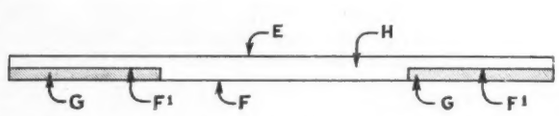


Fig. 4.—Here is shown cross-section the plate *H*, cast from the pre-makeready mat shown in Fig. 3. As will be noticed, the plate is upside down, the printing face *F*, *F*¹ and *F*¹, resting upon the planer bed with the bottom *E* of the plate on top. The second proof *GG* of the original photo-engraved plate mentioned in caption for Fig. 1 is laid under the plate. The extra 0.003 in. height of the raised area *F* (representing the capital T) will not be deformed in planing the plate to thickness because of the support around the capital T area afforded by the proof *G*.

paper circulars, newspaper ad plates and mats.

Some previous hazards that have kept the stereotype from advancing into the hard-packing press field and on to the finer coated papers have been low material in the type form, improper form lockup, shrinkage of the mat and stereotype metal, the fast wearing out of plates on the presses and prejudice from previous experiences with inferior stereotypes. To a large degree, the materials imperfections have been eliminated.

Type forms to be stereotyped are now locked up with all high Monotype or Elrod material with 12 or 18 pt. zinc base material around the subject, and not less than 36 pt. type-high material around the form with closed ends so as not to cause heavy bolsters which in turn would make the plate heavy on that end. All cuts are metal mounted, the same as for lead molding.

Makeready can be eliminated to a large degree in type forms by placing a piece of 40 lb. red-rag matrix or a suitable blotter form of paper under the form. The lockup is loosened slightly and planed down firmly. This procedure will level the face of the entire form by causing each unit in the form to seat itself in the cushion base, in relation to the 0.918 in. plane.

The laying of thin strips of suitable material on each side of a single bold type line in an open space will eliminate a concave surface in the line as reproduced in the plate. This procedure can be carried out as needed with respect to other openings that would likewise cause concave surfaces. A good molder soon learns what is required.

A lot can then be done with gummed tape on the back of the matrix before casting by relieving those portions that will punch on the pull-up proof and by breaking down hard edges of cuts and halftones by vignetting the edges so as to fade them out to a soft print.

This helps the pressman—and the pressman is the fellow who can either make or break your fondest dreams.

The modern hard-packing stereotype metal is not of the newspaper kind. It is alloyed to meet hot plate-bending or curved casting conditions, to hold the impression cast from fine screen cuts and to eliminate porosity. The less porosity in the plate, the better conditions will be for nickeling, because trapped oxygen does not cover easily.

Some of our plates are cast in curved form and some are hot-bent.

On four-color 120-line magazine plates (0.180 in. thick) accurate register is obtained by trimming the flat plates exactly to the register marks and then hot bending at 410 deg. F. in an Ostrander-Seymour hot-bending machine.

The plates are bent without any nickel deposit on the face. Consequently, the stress is exactly the same on each plate as they are bent at the same temperature. The plates are then nickeled with curved anodes.

By using a 12 per cent tin, 12 per cent antimony, bal. lead content flat bread wrapper plates 0.250 in. thick have been hot-bent to a 36 in. curve without any cracks. As an experiment they were put

in a cold window all night and in the morning not the slightest change was noticed in the radius.

Advances in Operating Technique

Most important of all, perhaps, is the fact that manipulating procedures in stereotype platemaking have been revised radically. The reason is that finer equipment and materials have brought necessary changes in operating technique. These procedures are important to the successful production of duplicate stereotype plates for commercial work and differ considerably from the technique used in newspaper plate production.

These skilled operating procedures may be compared to the skills required in other segments of the printing industry. A number of printing and publishing plants now make color stereotype plates from one up to the number of multiple plates required, according to the press upon which the work is to be printed.

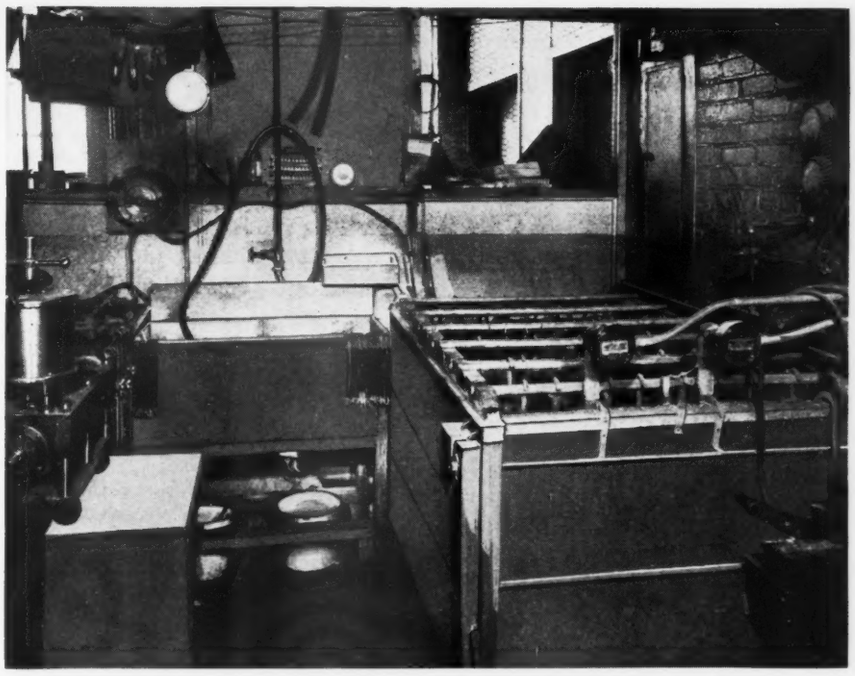
Our plant is regularly making color stereotype plates to the trade. Our work falls into the same category with respect to service as the trade compositor, the advertising typographer, the electrotyper, the offset-lith platemaker or the gravure platemaker.

Exact Control of Shrinkage

In the past, one of the greatest hazards with respect to register in stereotype color plate production was the shrinkage of the mat and the stereotype metal. Now this condition does not remain a hazard. It has been found that all clay based mats will shrink practically ½ pt. to the inch with the grain and 1 pt. to the inch across the grain.

The explanation of these two statements for the uninitiated is that the mat-making machine deposits the tiny fibres more in one direction than the other. Moisture in the mat is necessary to provide plasticity. The fibres absorb moisture and the mat itself holds some moisture mechanically. As the fibres absorb moisture they expand. The elimination of this resulting expansion, as well as, moisture held mechanically is accomplished by dissipating the heat during the molding operation under continuing pressure and the influence of heated platens. Drying blankets placed over the mat absorb the escaping moisture. The escape of moisture from the fibres and the resulting shrinkage sets up a tension which cannot be overcome completely by holding under pressure during drying. As a result, when the pressure is released, the stresses that have been set up cause a slight shrinkage. The molding technique is such that stereotype platemakers can control shrinkage for register in color work because the shrinkage per foot of the mat is known. If the copper four-color originals (photo-engravings) are in register, the duplicate stereotype plates will be in register, dot to dot.

Knowing the exact mat and plate shrinkage per inch, for instance, makes possible the production of color printing plates for folding carton printing where the panels must register with the score lines and the color over all.



View of stereotype nickel-plating section in plant of Geiger Stereotype Co., Dayton, Ohio. At left is the plate-cleaning and etching tank; in center is the plate-rinsing tank, and at right the nickel-plating tank.

By adding the shrinkage per inch with the grain of the mat and running the grain the direction of the length of the job and adding the cross grain shrinkage to the width of the job to a proportion drawing or art work and photographing the same size the colors will register with the panels and the score lines as well as over all.

A little different molding technique is required for Reily-types since the 325 deg. F. heat required in this operation may soften the solder that joins the inserts in the plate. After a mat has been molded from such a plate carefully remove the molding felts from the releasing paper, leaving the mats on the originals. Now slide the form to a cooler slab. In a very few minutes the solder will have become reset. Then when the mat is lifted the register of the inserts remains as before.

For the few hot bent curved plates for carton jobs that curve from top to bottom, this same principle can be applied. If the job curves from side to side the mat can be placed on the pattern in just the opposite direction and the curved plates will register. Practically all carton jobs are printed from flat plates.

With this known principle, the width of bread wrappers can be added to the pattern as per the grain running with the width of the job, and the cross grain being from top to bottom, the shrinkage occurring will stretch back to the original pattern in hot bending. Claybourn patterns may be used to advantage for stereotyping curved or flat plates due to this principle.

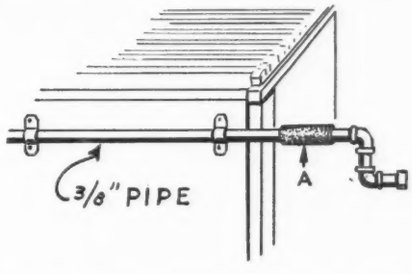


Fig. 6.—Simple device originated in plant of the Geiger Stereotype Co., Dayton, Ohio. At the left of the crank handle at *A*, several thicknesses of abrasive cloth are wound around the shaft. This device is used to clean and brighten the inside of the supporting hooks of plate holders, one type of which is shown in Fig. 5. It is necessary to have good electrical contact between the plate holder and the round bus bar on which the plateholder is suspended in the plating tank. A few turns of the crank—and there you are with a clean electrical contact surface. This plate holder hook polishing device was made from ⅜ in. gas pipe and fittings.

Pre-Makeready Operations for Halftone Printing

In preparing for pre-makeready operations, two proofs are pulled of the plate or form on paper approx. 0.006 in. thick. During the molding operation the underlays will iron down to about 0.003 in. This is the desired height the solids should be for hard-packing printing. The solids are cut out of both proofs and the one is attached to the back of the matrix, registered to the outside lines of the cut and molded right into the mat itself. In the casting operation the attached makeready sheet will then lower the highlights and, consequently, the solids will be raised.

The other proof sheet is then registered on the face of the plate when the plate is shaved, thus retaining the makeready in the face of the plate. In the hot-bending system this makeready will not iron out

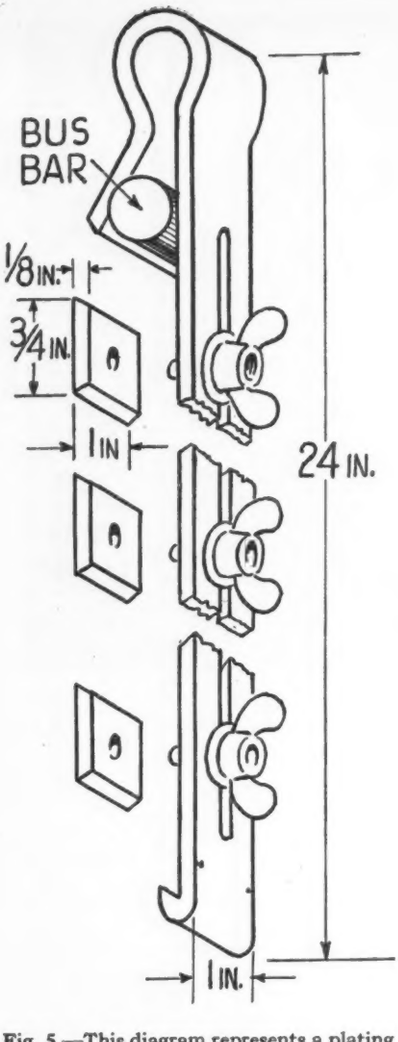


Fig. 5.—This diagram represents a plating tank plate rack devised in plant of Geiger Stereotype Co., Dayton, Ohio. As many as three flat or curved plates, or patches, can be clamped to the holder for immersion in the plating tank. It is constructed from ⅛ in. thick by 1 in. wide by length copper stock. The beveled clamping pieces are slidable in the slot to suit plate dimensions. Mr. Geiger states the very slight nickel deposit on the back of the plates has never proved to be detrimental on this rack. The rack saves drilling and multiple copper hooks.

when the plate is bent as the stress occurs on the back of the plate and the face is embedded in a press felt blanket. Soaking this blanket for a few hours in plain water eliminates any impression marks caused by hot bending so that it can be used over and over. This pre-makeready system can be employed best by large printing firms that have their own stereotype plants. It's use, however, is not so logical for the commercial plant.

The success of hard packing press stereotype plates is dependent largely upon always using the original copper or zinc etchings instead of electro duplicates. Never try to register color with a combination of the two or a combination of zinc patterns and copper patterns as these two metals shrink differently.

In producing hot baked direct pressure mats it is necessary to remove the enamel from the face of the etchings. The brown enamel on copper etchings can be removed by immersing in hot lye or caustic solution for about 15 min. and then brushing lightly.

The blue enamel on zinc etchings can be removed by heating the etching and pouring on a sufficient quantity of wood alcohol and then brushing lightly. Then flush both with gasoline and dry with a clean and lintless rag. Cleanliness is absolutely necessary throughout the process.

In molding straight black magazine pages containing 120 line screen cuts we find a silk covered 60 lb. white matrix makes an excellent overlay. It will produce additional depth of dots and quality finish, especially if the molding press is jogged slightly as it reaches the molding peak.

This silk overlay reverts to the old-fashioned brush-beaten matrix made with a backing powder of marble dust and dextrine. We used to put a wet sheet of unbleached muslin over the form for halftones and then beat the form in with the molding brushes and dry the form with this on the back. The muslin, of course, was stripped off before casting.

The silk overlay can be made up into sheets with a solution of Quickstick mailing room paste and dried between two drying blankets in the press or a steam table. Afterwards it is cut to size.

The value in having the stereotype matrix filed in magazine production in case of a press smash of several or more plates is not to be discounted. The speed of stereotyping will compensate for this emergency.

In the Geiger Stereotype plant four different types of mats are used. We feel no mat on the market will answer all purposes. The Burgess Supreme magazine mat is satisfactory for halftones. The mat does not fracture easily and it produces a very fine dot.

The Hill All Purpose mat with clay base is used for bread wrappers and folding cartons.

A very soft Swiss mat is used for ruled forms. The molding pressure compares favorably to that used in molding electros.

The gray Certified High Shrink mat is used for newspaper circulars. This mat has a coated face, and is loose fibered; it is easy casting and flexible enough to take the small curve of the Tubular casting mold.

Casting the Plate

We use a Hoe Speed flat mold. In a commercial platemaking plant it is necessary to cast varying thicknesses of plates at different times throughout the day. The turn of a wheel attached to a shaft adjusts the box from type-high to the thinnest bars.

A unique arrangement of four gas lines under the mold maintains a very low burning flame. There is no danger of warping the mold from the heat. The gas flames are regularly spaced and the flames eliminate the pouring of heater plates. Pouring heater plates is a physical effort as well as disrupting the temperature of the metal. Attached to the frame of the mold is a thermostat that records the exact temperature of the mold. When this temperature coincides with the thermostatic control dial of the metal pot, the mats are taken from a flat scorcher of our own design, are put in the casting box and the plates are cast. Thus the first plate is a good plate and several preliminary casts are not required. On very close register for color, the first plate is discarded or sometimes it is held for a spare.

Color patterns usually are provided with exacting register marks at the edge of the subject. Different methods of registering or preparing color patterns for mat making are used. The mats will show register marks for either curved or flat casting and for hot bending, as the case may be.

Since our plant does only commercial work, we hot-bend all plates, as it is much more economical to buy one cylinder for each curve than to buy a curved casting box and shaver to match for each curve. It is possible to cast a bastard size curved plate and then hot-bend it to different curvatures, but this mechanical manipulation is not as handy as casting all plates flat in the commercial plant.

Since most of our curved plates are hot-bent the flat plate is beveled, then preheated before it is put into the hot bender. The plate does not concave at the edges. With a pair of dividers we mark an arc the proper distance out from the center of the usual register mark. A line is then scribed to the exact apex of the two arcs. The flat plate is then trimmed exactly. This trimmed edge butts against the horizontal right-angle bar on the curving cylinder. When the plate is entirely in the bender the machine is stopped for a few seconds to set the curve more positively and the bending operation is then followed on through. Very few seconds are required to bend a stereotype plate. I would say less than a minute is required for the entire operation when in process. We adjust our bending machine so as to have a very slight spring-on fit of the plate on the press cylinder.

Cleanliness is essential throughout the casting operation. Our plates are poured with a wide-lipped ladle. The metal pours from the bottom of the ladle and passes under a baffle plate before going into the mold, thereby eliminating any drossy metal. This ladle is our own design and is used by magazine houses that operate stereotype departments.

We use an Essmueller rotary plate-shaving machine. It is accurate to one-quarter thousandth of an inch. The milling machine type of cutter does not distort the face of the plate.

Nickeling the Finished Plate

Nickeling the finished plate is an important part of the entire platemaking operation. The life of the plate on the press is dependent upon a hard yet ductile nickel deposit.

For cleaning the plates previous to immersing them in the plating tank, we use an electric cleaner with perforated lead anodes. It is an all-cold arrangement and is very simple in operation. A

75 gal. lead-lined tank is hooked up indirectly to the generator. That is, a 200 amp. rheostat is interposed in the line so the full charge coming from the generator will not oxidize the plates too fast. Too fast or too long an oxidation is detrimental to halftone dots. The cleaning solution is composed of salt and sal ammoniac and the current is reversed.

The plates are scrubbed lightly by hand with whiting, after which they are rinsed. They are then suspended in the electric cleaner solution and turn black almost immediately. They are again placed in the scrubbing tank and are brushed lightly while rinsing with water. This cleaning operation prevents peeling of the plates and adds to the printing quality.

The plates are now placed in the nickeling tank. The tank is operated at from 2½ to 3 v. Chromalox heaters bring the temperature of the plating solution up to about 80 deg. F. The heating arrangement is thermostatically controlled so that the temperature of the solution does not rise above 80 deg. The solution is agitated constantly with compressed air. Before entering the tank the compressed air passes through a positive air filter to prevent oil getting into the solution.

We keep our anodes bagged. We use 99 plus hard carbonized anodes. Our pH (hydrogen ion concentration) is carried at 6.2. The solution is slightly to the alkaline side and produces a hard yet ductile nickel coating which gives maximum wearing qualities of the plates on the press.

With the method used, the cleaning solution carries over small amounts of chloride to the plating tank, so it is only necessary to add sulphuric acid to maintain the pH value.

The pH value of the plating solution is determined with a Hellige pH finder. Five cubic centimeters of the solution are put into a small vial which fits into the instrument. Then five more cubic centimeters are put into a duplicate vial which also fits into the instrument alongside of the other vial. Into the second vial are put five drops of indicator fluid. The vial is shaken. By looking through a lens when matching the colors of the two specimens, a decimal mark on a stained glass wheel indicates the pH value, whether alkaline or acid.

With respect to the nickel metal content, the nickel chloride content, and the boric acid content, the writer has a series of titrations chemically practiced as per 1 oz. per gal. Titrating the solution in the same manner each week indicates how much of each element has been lost through operation. The regular quantities of each needed by the solution are replenished by soaking into the solution in a sack. The boric acid must be boiled in.

At intervals, the plating solution is given a good filtering with an Alsop filter for about 1 hr. At regular intervals, too, all of the anode bags and the anodes are washed. The solution is then built up to normal again.

By using this same type solution and raising the temperature to 140 deg. F., a very hard shell, 0.001 in. thick can be deposited on the plate in 20 min. This plating will hold up on the press for as high as two million impressions. This type of solution, however, must have constant analysis and must be kept "right on the button". In this case, the pH value is maintained slightly to the acid side.

Developments in fast four-color web offset publication printing in plant of Trenton (N. J.) Times— Research work participated in by press, ink, paper and ink drying equipment companies

THE only press of its kind in the world —a Hoe web offset machine which prints four colors on each side of a 70 in. web and, at speeds of 12,500 to 15,000 cylinder revolutions per hour, and delivering up to 32 pages of tabloid through a newspaper folder—was built for the Trenton (N. J.) *Times* shortly before the war. Around this press today centers an extensive research program which is being carried on by the Trenton *Times* in collaboration with R. Hoe & Company, Inc., International Printing Ink Division of Interchemical Corporation, West Virginia Pulp and Paper Company and Selas Corporation of America to further develop four-color web fed offset lithography.

How Press Was Acquired

Back in 1935, the *Times* conceived the idea of publishing a four-color supplement with its Sunday paper. The first step was the establishment by Thomas J. Kerney, General Manager, and Don A. Johnson, Production Manager, of an experimental photo laboratory; and in order to learn as much as possible about getting and reproducing color copy, hundreds of Kodachrome and Dufay color pictures were taken, developed and separations made. A Bermphol three-plate, one-shot color camera was purchased and numerous shots were taken with this camera which gives the yellow, blue-green and red separation plates in 5 in. by 7 in. size at one exposure.

The next step was to find a suitable method of reproduction; and with this in mind, Kerney and Johnson visited color plants in several cities. They became convinced that the offset process—with its rapid makeready, low cost plates and the advantages of making photo-composed plates—came closest to fitting their needs.

But after looking all over the United States and Europe, Kerney and Johnson still found no existing web offset press suitable for high speed production of multi-color printing on both sides of the web simultaneously. The only four-color offset presses then were sheet-fed machines printing on one side of the sheet at a time.

Don Johnson believed that a press could be designed to meet their advanced requirements for precision, high quality, multi-color web offset printing, and he laid the problem before R. Hoe & Company, Inc., who had built the newspaper press on which the editions of the Trenton *Times* are printed. Finally, after several discussions with Johnson and Kerney, Hoe planned a press that met the approval of all concerned both in theory and, later, in actual performance.

Press Design Radically New

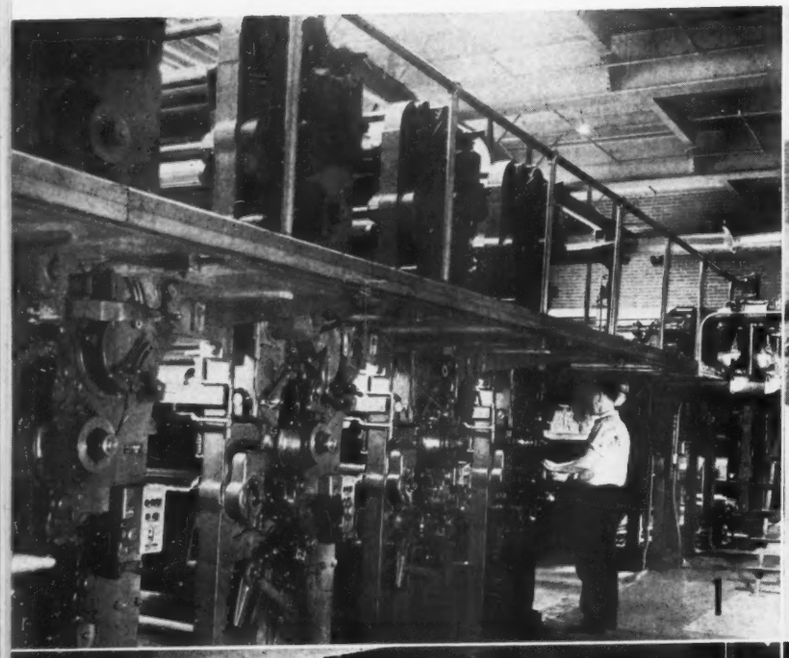
The design embodied many innovations, but probably the most important were the simultaneous printing on both sides of the web and the arrangement whereby the web was made to pass from unit to unit on a horizontal plane with no compensating or other rollers touching the printed web between units. The latter eliminated the possibility of smut during printing; and, so long as runs were limited to absorptive news stock, the use of thin films of strong ink made drying before folding unnecessary.

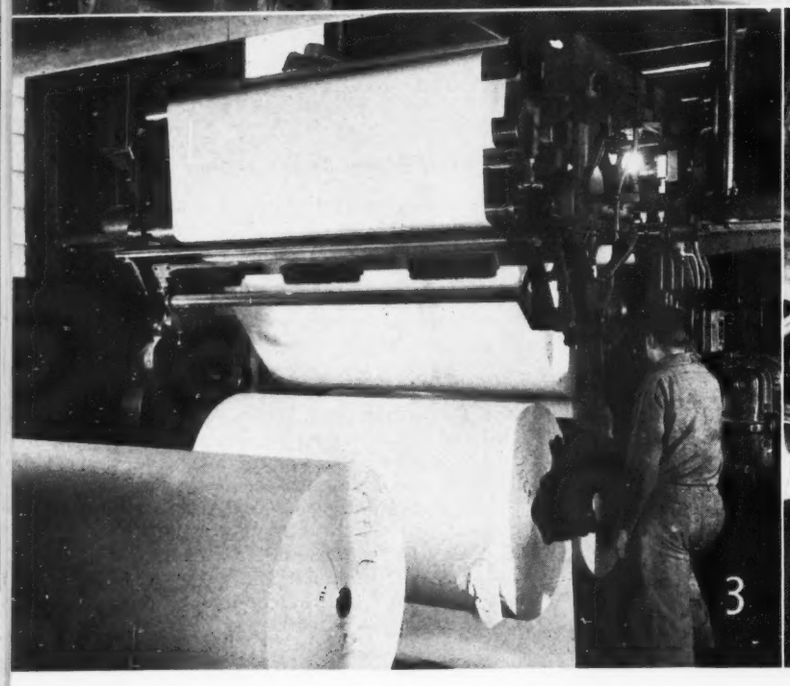
To the Trenton *Times* organization, lithography itself was almost as new as the press it had purchased, but they soon mastered the technique and began to turn out some very creditable work which commanded world-wide attraction.

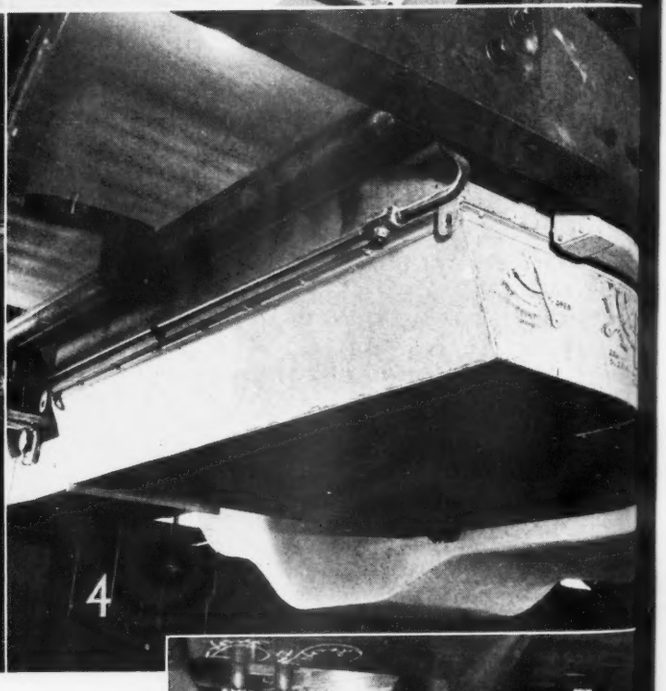
Inks Smudged On Standard Offset Papers

In addition to printing the supplement, the *Times* took on commercial color offset work in order to keep the press busy. Here new difficulties were encountered. Many of the commercial jobs called for standard quality offset paper or smoother paper, but when a web of such papers was run through the press, the ink smudged during the folding operation. Consequently, the Trenton *Times* and Hoe decided to carry their development work further.

International Printing Ink, because of experience in developing the Vaporin process for letterpress printing and the Vapolith process for lithography, was asked to develop instant-drying offset inks for this new type of press. West Virginia Pulp and Paper Company was asked to supply new paper formulations. The Selas Company was consulted about drying equipment and Hoe undertook to







(Photos Courtesy Trenton (N. J.) *Times*)

Multi-Color Offset-Lith Designed for Publication Work

Hoe Offset Press in Plant of Trenton (N.J.) *Times* Prints Four Colors on Each Side of the Web—Speeds of 12,500 to 15,000 cyl. rev. per hr. possible; 70 in. wide web; delivers up to 32 folded tabloid pages.

1. Side view of press, showing eight printing units with heater and folder at the far end.
2. Looking down on the top four of the eight printing units.
3. Here is shown the paper web entering the press.
4. The Selas heating unit showing web entering at left.
5. Folded tabloid signatures coming off the press.

extend the press for heater space as well as supply the necessary cooling rollers. Research staffs of all of these companies worked together to help lick the problem.

Heat Set Offset Process Developed

International Printing Ink's Vapolith process is an adaptation of the principle used in the Vaporin process. The inks used are compounded with special properties for offset-lith printing. They set instantly when the printed web passes through a special type of dryer developed by the Selas Company and set in between the last printing cylinder and the folder.

This dryer is an entirely new design, drying both sides of the web with only one heating and cooling operation. Heat is applied to both sides of the web simultaneously, and then cold air is directed against the heated web on both sides before the web contacts the cooling rolls. This cooling air assists in obtaining a surface film on the resins, and then the web may safely be led around the cooling rolls where the final set is obtained.

The Vapolith inks require special blankets and rollers. Several suppliers participated in the project, and satisfactory blankets and rollers with the necessary characteristics have been developed and are available.

Trial runs have now been made, including a wide variety of subjects, on paper of various basic weights. Particularly good results were obtained on an uncoated offset paper containing a special filler which gives it a high surface ink receptivity. Additional work is now being done by West Virginia to perfect brush-coated and machine coated papers for this kind of printing.

Tests to date, according to Mr. Johnson, indicate the commercial feasibility of four-color lithography on both sides of the paper with press speeds of 800 to 900 ft. per min., using inks that set instantaneously on paper which meets all lithographic requirements.

In the near future, further trials are slated to be made on a variety of stocks including newsprint, light weight machine finish papers, etc.; and in the light of the experience gained thus far, favorable results are confidently expected.

Equipment Makers Granted Price Increase by OPA

OPA has granted printing equipment manufacturers an average increase in the selling prices of their products of 12%. Below is printed the table which the manufacturer may apply to his sales. The list of the equipment affected by the order is also given below.

PRINTING MACHINERY

(RMPR 136, Order 568)

Manufacturers' Maximum Prices

FOR the reasons set forth in an opinion issued simultaneously herewith and filed with the Division of the Federal Register, and pursuant to section 30 of Revised Maximum Price Regulation 136, *It is ordered*:

(a) The maximum price for sales of any new printing trades machinery and equipment by any manufacturer shall be established as follows:

(1) For any printing trades machinery and equipment for which the manufacturer had a published list price in effect on October 1, 1941, or an established price in effect on the base date, the maximum price shall be the price computed under section 7 of Revised Maximum Price Regulation 136, plus 12% of that price.

(2) For any printing trades machinery and equipment for which the manufacturer can compute a price under section 8 of Revised Maximum Price Regulation 136, the maximum price shall be computed under that section using the price computed under the preceding subparagraph (1) as the maximum price for the product before modification.

(3) If a manufacturer is unable to establish a maximum price for a product under the provisions of the preceding subparagraphs (1) and (2), he may apply to Machinery Branch, Office of Price Administration, Washington 25, D. C., for permission to establish a maximum price for the product under the provisions of this paragraph. The application for such permission shall include: (i) Profit and Loss Statement for the year 1941 (if not previously filed); and (ii) a proposed price determining method to be applied under the provisions of this paragraph. The price determining method shall be the method of determining price by relation to cost that a manufacturer had in effect on the base date for determining selling prices of products of the same or similar type, adjusted to reflect the ratio that general selling and administrative expense and profit bore to sales in 1941. Upon receipt of approval, in writing, from OPA, a manufacturer may establish a maximum price for any product for which he is unable to establish a price under the provisions of the preceding subparagraphs (1) and (2) by applying the price determining method, filed with and approved by OPA under the provisions of this paragraph, to cost of production as provided in section 10, except that for the cost of purchased parts and subassemblies to be included in the cost of production, the manufacturer shall use his cost on October 1, 1941, or if the manufacturer cannot determine his cost on October 1, 1941, the price for the parts or subassemblies in effect to a purchaser of the same class as the manufacturer in the same location on October 1, 1941. To the price which the manufacturer computes for his product by use of his price determining method as provided in this paragraph, a manufacturer shall then add 12% of such price and the resulting figure shall be the maximum price of such product.

If a manufacturer is unable to compute a price for any printing trades machinery and equipment under the provisions of subparagraphs (1), (2) and (3) above, the maximum price shall be computed under sections 9 and 10 of Revised Maximum Price Regulation 136, without reference to the provisions of this order.

(b) If a manufacturer sells his printing trades machinery and equipment both direct to users at a fixed price and to resellers at a discount off that price, the manufacturer may apply the increase factor provided by this order unevenly to the two types of sales in the following manner:

(1) Without application to OPA, the manufacturer may apply to his sales the following table: *Provided*, That his total dollar sales are not increased by reason of the use of percentages in the table, instead of the increase factor set forth in paragraph (a). A manufacturer using the table shall report to OPA on the fifteenth days of January, April, July and October in each year, and shall state separately the sales to resellers and discounts allowed and the sales to users for the preceding three months period, and what percentages in the table were used. If any quarterly report shows that the total dollar sales have been increased by more than the 12% factor by reason of the use of the table, the manufacturer shall submit to OPA, with his report, a proposed method of adjusting his prices so that the excess in dollar sales shown by the report may be absorbed in a reduction of total dollar sales. The table shows in the first column the percentages of sales which the manufac-

Percent of sales made through resellers	5% discount		10% discount		15% discount		20% discount		25% discount		30% discount		35% discount		40% discount	
	Reseller	User	Reseller	User	Reseller	User	Reseller	User	Reseller	User	Reseller	User	Reseller	User	Reseller	User
....	....	12.0	....	12.0	....	12.0	....	12.0	....	12.0	....	12.0	....	12.0	....	12.0
1-9.9	12.6	12.0	13.3	11.9	14.0	11.9	14.8	11.9	15.7	11.8	16.8	11.8	18.0	11.7	19.4	11.6
10-29.9	12.5	11.9	13.0	11.7	13.8	11.7	14.3	11.4	15.0	11.3	15.8	11.1	16.7	10.8	17.7	10.6
30-49.9	12.4	11.7	12.8	11.5	13.2	11.2	13.7	10.9	14.1	10.6	14.6	10.2	15.2	9.9	15.8	9.5
50-69.9	12.2	11.6	12.5	11.2	12.8	10.9	13.1	10.4	13.3	10.0	13.6	9.6	14.0	9.1	14.3	8.6
70-89.9	12.1	11.5	12.3	11.0	12.4	10.5	12.5	10.0	12 6	9.5	12.8	8.9	12.9	8.4	13.0	7.8
90-99.9	12.1	11.4	12.1	10.8	12.1	10.3	12.1	9.7	12.2	9.1	12.2	8.5	12.2	7.8	12.3	7.4
100	12.0	....	12.0	....	12.0	....	12.0	....	12.0	....	12.0	....	12.0	....	12.0	....

turer normally makes through resellers; the succeeding column headings show the average discount which the manufacturer allows to resellers. In applying the table the manufacturer finds in the first column the percentage of sales which he normally makes to resellers, and in the line of that percentage, he finds under the column heading showing his average discount the percentage increase factor by which he increases his sales price to resellers and his sales price to users. He may then substitute in the case of each type of sale the applicable increase factor for the percentage increase factor of 12% set forth in paragraph (a).

(2) If the manufacturer wishes to apply the increase factor unevenly to sales to resellers and sales to users in any manner other than that set forth in the above table, he may apply to OPA for adjustment of his maximum prices under the provisions of section 2 (c) of Supplementary Order 142.

(c) For the purposes of this order the phrase "printing trades machinery and equipment" shall be taken to mean the following machinery, mechanical accessories (such as repair and replacement parts, interchangeable parts, jigs, fixtures, work-holding and positioning devices and rests) and mechanical equipment when designed and sold exclusively for use by the printing trades: (The numbered and lettered headings of the list are indicative and do not include machines or equipment not listed under the headings.)

(*Continued on Page 30*)

St. Petersburg Times
U.S. CHOSEN AS HOME OF UNITED NATIONS
Lower U.S. Income Taxes Start in Two More Weeks
Exact Location Of UNO Capital Selected Later
Mother of "Kidnaped" Baby Held on Charge of Murder
Utica Observer-Dispatch
Reds Call Envoy from Tokyo; MacArthur Ouster Bid Hinted
Detroit Wins 4-1 to Even World Series
THE LIGHT
HOME EDITION
HOUSE SET TO PASS TAX CUT
Wainwright Reveals Why Japs Were Able to Overrun Luzon
Solons Assert Themselves In World Scene
Sports
Detroit Welcomes Baseball Champs
Strikes at a Glance
MAC ARTHUR ORDERS JAPS TO LIBERALIZE
GENERAL 7 MEN LOST AT SEA
STORY OF FORTUNE BRANDED FALSE
DONATIONS FOR BOYSVILLE

Miniature photographic reproductions of front pages of the St. Petersburg (Fla.) *Times*, the Utica (N. Y.) *Observer-Dispatch* and the San Antonio (Tex.) *Light*. The miniature illustration of the classified page was taken from one of the papers, the "type" for which was composed on the Vari-Typer. These newspapers, with a number of others, have been produced for limited times without conventional typesetting means. Proofs of type matter produced on the Vari-Typer or I.B.M. machines are pasted up in page form (similar to offset-lith copy preparation). The page layout is then photographed and made into a zinc etching by photo-engraving. After the page-size zinc etching has been routed to deepen the non-printing areas, a stereotype mat is molded and a plate is cast in the same manner as is done from a standard type form.

Page Forms *for newspapers produced by typewriter-like composition, reproduction proofs, page pasteups and photo-engraving*

WE ARE reporting an unusual method of newspaper production without respect to the reasons for producing newspaper pages by that method, nor will we discuss comparative costs between the usual and the emergency methods of producing newspaper pages. Our only interest is to keep our executive readers informed about technical events.

During the past several months a number of newspapers in various parts of the country have been produced for short periods without standard composing machinery. Among the newspapers (up to 32 pages in a number of cases on certain days) that have been produced by the method described in this article for more or less brief periods are the San Antonio (Tex.) *Express*, *Evening News* and *Light*; the St. Petersburg (Fla.) *Morning Times* and the *Evening Independent*; the Utica (N.Y.) *Observer-Dispatch* and the *Daily Press*; Jersey City (N.J.) *Jersey Journal*; Des Moines (Ia.) *Register* and *Tribune*; Bayonne (N.J.) *Times*; Quincy (Mass.) *Patriot-Ledger*.

The editorial and news composition has been done on Varityper and IBM Electromatic machines; the composition thus secured has been trimmed to proper size and pasted up (similar to offset-lith pasteups) on large sheets of cardboard; the advertisements were handled either by taking proofs of existing plates, or by typing some of the context on the Varityper or IBM machine and assembling them with engravers' proofs of illustrations, and fastening them in proper position in the page pasteup. The complete page unit pasteup is then photo-engraved. Before the page photo-engraving is sent to the stereotype room, the non-printing areas are routed out. Because of the overall shallow depth of the non-printing areas, routing must be fairly thorough to prevent "bottoming" on the press of the non-printing areas in the stereotype plate.

The machines used in composing the reading matter are of two kinds—the Varityper (made by Ralph C. Coxhead Corp.) and the IBM (made by International Business Machines Corp.). We will confine our description to the Varityper, not that the two machines are exactly alike, but one description will serve the purpose.

The Vari-typer is a typewriter-like machine. The distinguishing feature is that the type characters are carried on a segment or curved hard-metal shuttle plate, similar to the old Hammond typewriter. The curved segment bearing the type characters is approx. 2½ in. from end to end. The segment carries 90 characters consisting of capitals, lower case, figures and punctuation marks. The characters are arranged in three rows. The machine is actuated by a small electric motor. When a keybutton is depressed the shuttle is rotated automatically through a sector of a circle until the character wanted is positioned in front of the paper where it is to be typed. The type character is then automatically impressed against the paper. The whole operation of shuttle movement and printing the character is lightning-like in action. Thus it will be seen that the operator does not punch the keybutton as in ordinary typewriter manipulation, but simply depresses the key to set the shuttle plate and character impression mechanisms in motion.

A one-time carbon paper ribbon, ¼ in. by 1200 ft. long, is used in the Varityper, *i.e.*, the ribbon is used once through the machine and is then discarded.

The type font, as has been explained above, is carried in relief on a curved hard metal segment, or shuttle plate. A selection of 68 faces is available, ranging from 6 pt. to 18 pt.

Vari-typers can be supplied with automatic justification mechanism for typing equi-distant or even right-hand margin. The attachment automatically measures the number of units by which a line may be short. The operator then repeats the line and the machine automatically spaces out between the words and letters so that the second typing of the lines bears an even right-hand edge. The range of equi-distant line spacing is from 1.9 in. to 7.4 in. wide.

When changing from one body size of type (6 pt. to 18 pt.) to another, means are provided to suit the horizontal letter spacing according to the set-width of the type characters. All Vari-typers are equipped with some combination (at least two) of 10, 12, 14, 16 or 18 characters per inch. A means is also provided to change the vertical line spacing to permit 9, 6, 4½, $3^3/_5$, and 3 lines per inch.

Vari-typers are supplied in various models with platen mechanisms that range from 9 in. to approx. 24 in. wide.

Much of the head lines, particularly in the larger point sizes are "set" by hand from fonts of printed letters. The letters are printed in black on pieces of cardboard of suitable size. The cardboard letters are set in a stick or container by hand. When the line is finished, adhesive tape is pasted over the reverse side of the cardboard pieces to hold them together in alignment. The head line is then fastened in proper position in the pasteup of the page.

For those who are not familiar with the term "pasteup", we will explain that each page is produced in page form from the pasteup by photo-engraving. Each page is pasted up as a unit on a large sheet of board. The heads, advertisements, news and editorial articles and the illustrations are in reproduction proof form. Each proof is trimmed closely to the edge of the type matter or printing image and is fastened in proper position on the pasteup.

Some of the newspapers produced by this method carried evenly spaced measures in the news columns and some did not. Likewise, some papers were made up with column rule lines and others carried from 12 pts. to 18 pts. white space between columns without rules.

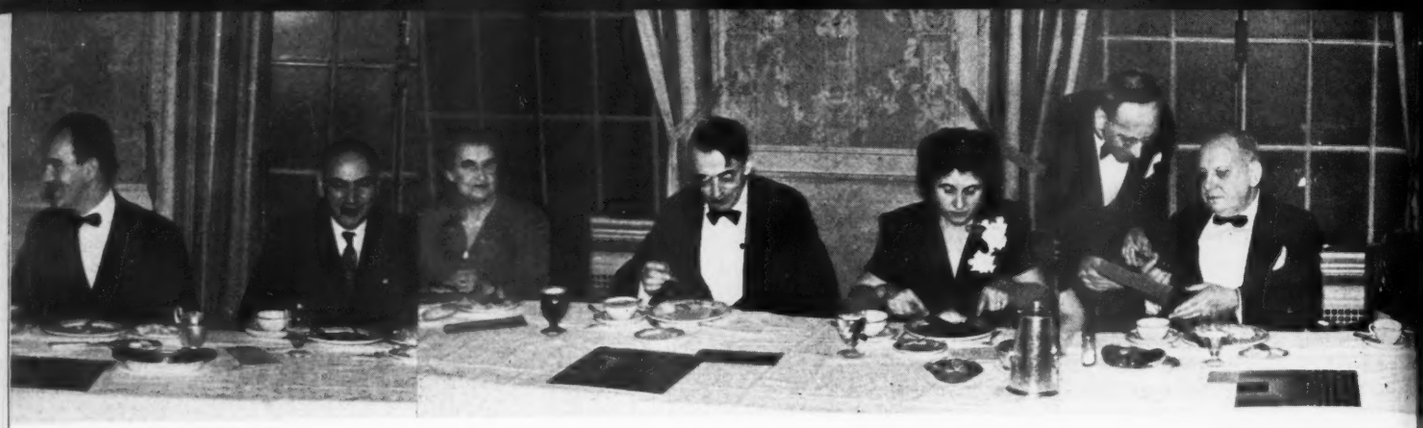
Considerable of the reading matter in the newspapers was composed in double column width, and as it appears in the paper is approx. full 8 pt. body size.

In one paper, the want ad or classified section consisting of six pages was pasted up eight columns per page and reduced about one-third when the pages were photo-engraved. In another paper, the classified ads are a mixture of uneven and equi-distant line measure as produced on the typewriter and also by hand-lettered copy.

Some papers were photo-engraved in all over halftone plate form, but the majority were in straight line work.

Trends in Stockholders' Reports

Each year *Financial World*, conducts a Survey of Stockholders Annual Reports. Part of the judging for a Merit Award is on a basis of modern design in the handling of format, typography and illustration. A recent bulletin of the Lithographers National Association gives an analysis of these production details of the 407 reports achieving a "modern" rating in the 1945 awards. This analysis shows that 20½% of the reports were in four or more colors, 20% were in three colors, and 41% were in two colors. Charts or maps were used by 68% of the "modern" reports, and 65% used ten or more photographs or other illustrations in their reports—over half of these using 25 or more illustrations. The top three winners—Caterpillar Tractor, Chesapeake and Ohio Railway Company, and Brown & Bigelow were lithographed. Weston Smith, originator and director of *Financial World's* Annual Survey reports the trend is to combine the annual stockholders' report with the annual report to employees.



PERSONNEL AT SPEAKERS' TABLE — CLEVELAND CRAFT

25th Anniversary Celebration, Cleveland Club of Printing House Craftsmen, held at Mid-Day Club in Cleveland on Saturday, January 19. About 250 Craftsmen, their ladies and friends were present. From left to right, they are:

L. E. Nichols, Morrison Printing Ink Co. (not shown); J. Homer Winkler, Asst. Supervisor, Graphic Arts Div., Battelle Memorial Institute, Columbus, O.; John R. Cain, President, Cleveland Typothetae Assoc.; Mrs. John R. Cain; Otto F. Ege,

Color of Acid Resist Indicates Base Height

DURING the war, several different gauges of photo-engraving zinc have been used to help along with conservation of the metal. The thicknesses other than standard 16 ga. (0.065 in.) are 18 ga. (0.049 in.) and 21 ga. (0.032 in.). In newspaper composing rooms where cuts are delivered unmounted by the photo-engraving department, it is necessary to have the stereotype department shave metal base to the correct height. In some plants, the thinner gauge metal is used for making halftones, while line work is done entirely on the thicker metal. Frequently, unless some plan is devised to insure shaving the right height base to bring the cut and base to type high, the wrong height base is supplied.

In the Cleveland *Plain Dealer* composing room, yellow cards approx. 5 in. by 6½ in. have been posted in a number of places in the makeup department. These cards inform the makeup men how to distinguish between the two different gauge thicknesses so that the proper height base may be ordered from the stereotype department. The card is reproduced in miniature as follows:

If back of zinc cut is

YELLOW

have base shaved 0.853 in. high

If back of zinc cut is

PINK or RED

have base shaved 0.869 in. high

Manufacturers of zinc photo-engraving stock coat the base with acid resist in various colors. The colors indicate the thickness of the stock. Thus the coating not only serves as an acid resist in the etching process but it instantly indicates the gauge thickness of the zinc. As will be seen, the *Plain Dealer* uses two gauge thicknesses of zinc: 0.065 in. (16 ga.) with yellow acid resist, and 0.049 in. (18 ga.) with red acid resist.

Cleveland Craftsman's Creed*

AS a Craftsman, this is my creed: I will strive to be a well balanced executive at all times, because: Printing production consists of the scientific, of the mechanical, and of the artistic creative spirit. But my responsibilities as an executive compel me to recognize that a just supervision of the human element is by no means the least of the qualities necessary to my profession.

At all times, as a true Craftsman, I must try to round out my supervisory duties so others will say: "There is a man whom we are proud to have in the Club—he shares his knowledge with fellow executives." My interpretation of "Share Your Knowledge" means giving, as well as receiving, both collective and man-to-man technical or administrative assistance. This I will do at Club meetings—or by man-to-man counsel in a private corner with my fellow Craftsman.

Dear Lord, preserve me from being too scientific, too mechanical, or too artistic. Grant me the right mental and spiritual qualities to conduct myself at all times in such manner that I may continue to believe . . . I am proud to be a Craftsman!

*Written for the Souvenir Brochure printed especially to commemorate the 25th Anniversary Celebration of the Cleveland Craftsmen's Club, January 19, 1946, Cleveland, Ohio.

Scholarship Endowed

According to *Galley Proof*, official publication of the Graphic Arts Association of Illinois, Inc. the Club of Printing House Craftsmen have endowed a Fred Hagen Scholarship at the Printing Department of the Carnegie Institute of Technology, Pittsburgh. The scholarship is in honor of the late Fred J. Hagen, who was vice president and superintendent of Workman Mfg. Co.

Photos by Wayne Gaspa

VELAND CRAFTSMEN'S TWENTY-FIFTH ANNIVERSARY

Cleveland School of Art; Mrs. Otto F. Ege; William Wesson, 25th Anniversary Committee Chairman; Ollie G. Fricke, Fifth District Representative, Dayton, O.; Mrs. Ollie G. Fricke; Walter H. Frick, President, Cleveland Club of Printing House Craftsmen; Mrs. Walter H. Frick; William Wesson, Chairman, 25th Anniversary Committee; Intl. President Guy Bradley, Indianapolis, Ind.; Mrs. Guy Bradley; Bernard J. Conway, Mayor Burke's personal representative; Mrs. Edward T. Samuel; Edward T. Samuel, Intl. Treasurer; Mr. and Mrs. MacD. Sinclair (not shown); at extreme right (not shown) was Intl. Representative-at-Large John Reay of the Columbus (O.) Club.

BOOKS

RECEIVED

"It's a Secret"

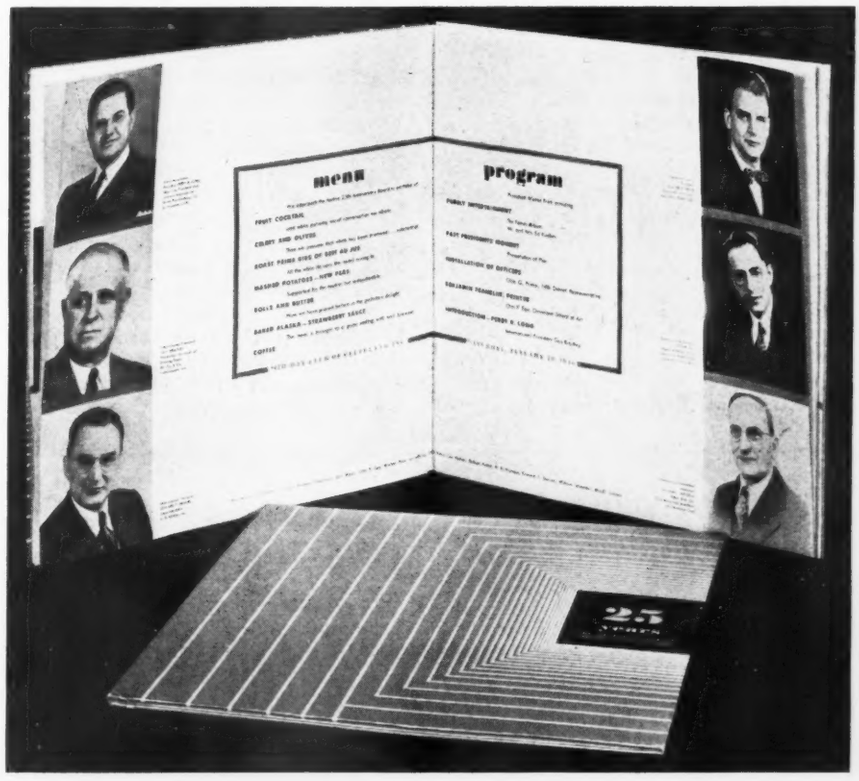
REYNAL AND HITCHCOCK, publishers at 8 West 40th St., New York 18, N. Y., have announced the publication in January 16 of "It's a Secret", an expose of subversive activities in Washington. The author is Henry Hoke, during the war in Washington as managing director of the Graphic Arts Victory Committee.

Ordinarily, *Printing Equipment Engineer* does not review books that do not pertain to the Graphic Arts Industry, but in the case of *It's a Secret* we do so because of Henry Hoke's activities in the printing field. He is well known to many printing executives.

Primarily an indictment of certain pressure groups now operating in the nation's capitol, with special emphasis on its report on the three grand juries and the collapse of the sedition trial, "It's a Secret" will be of interest to everyone concerned with the graphic arts industry because of its expose of the methods used by anti-democratic and hostile forces in employing the tools of the industry in an insidious campaign of disruption.

Walter Winchell says of *It's a Secret:* "It's revelations will shock the nation." Senator Harley M. Kilgore of the Senate Military Affairs Committee makes this comment: "This book appears to be a best seller. It will give you and me the information we must have to combat the orces of disruption that besiege us every day of our lives."

It's a Secret will be published in two editions, both illustrated: cloth-bound ($2.50); and 8½ x 11 paper-bound edition ($1.00) which will be issued under the imprint of The Pamphlet Press.



MINIATURE REPRODUCTION OF ELEGANT SOUVENIR BROCHURE

commemorating the 25th anniversary of the Cleveland Club of Printing House Craftsmen, January 19, 1946. The hard bound cover measures 12 in. by 12 in. Printing is in black and silver throughout on white enamel paper, 16 pages and cover. The contents of the book consisted of appropriate material, such as Cleveland Craftsman's Creed, three pages of chronological events in the 25 year existence of the club; a picture showing a meeting of the club in its first year; charter members of the club; officers and membership list; menu, program, and a statement concerning executive and technological developments for the next 25 years.

The brochure was edited by MacD. Sinclair. Layout was prepared by Otto F. Ege of the Cleveland School of Art. Professor Ege is a pre-printing and early printing authority and is an honorary life member of the club. Production was in charge of Edward T. Samuel, International Treasurer, and Superintendent of A. S. Gilman, Inc., Cleveland commercial printers.

The cover design is unique. It was produced under the supervision of Edw. T. Samuel, Supt., and George Ebert, Composing Room Supt., of A. S. Gilman, Inc., from preliminary layout. The first six vertical strips at the left were printed from electrotypes. The balance of the strips, mitered at 45 deg. angle, consisted of Monotype strip material graduated from 1 pt. to 36 pt. face. Only one side of the square, however, was assembled in the chase, the assemblage being used for all three sides of the square by successive press impressions. Altogether, with the black spot at the right, there are five impressions on each cover. Twelve firms participated in the production of the book.

CONSTRUCTIVE ACTION

taken at Detroit meeting attended by advertising agency executives, plate and mat-makers and by newspaper management and mechanical executives with respect to national advertising plates and mats

By STAFF WRITER

A SOUL-SATISFYING rebound to a constructive idea advanced by the Great Lakes Newspaper Mechanical Conference last October occurred in Detroit, Mich., on Tuesday evening, January 29. About four hundred people identified in one way or another with the handling, production and use of national advertising plates for newspapers attended the meeting. The meeting, held in the auditorium of radio station WWJ, was sponsored by the Detroit *Free Press*, the *Times* and the *News*. This was the first of a series of meetings to be held in the larger cities of the Great Lakes Conference area (Indiana, Michigan and Ohio). It is also hoped that similar educational meetings will be held in larger cities throughout the country.

National advertising plates for newspaper reproduction have been discussed many times at ANPA Mechanical Conferences, regional mechanical conferences, and at meetings of other associations. The problem is of long standing—but those who have tried to do something about the production of plates suitable for newspaper reproduction haven't gotten very far. The problem still exists and at present is aggravated because of the fairly recent employment of high shrinkage stereo mats, plus the turnover in advertiser and advertising agency production staffs during the war. Those who benefited by previous information have become separated from the production staffs of advertiser and the advertising agency. The result? Unsatisfactory national advertising plates and mats are being furnished newspapers.

As has been intimated above, the idea of holding regional educational meetings with respect to furnishing of electrotype plates and stereotype mats according to the peculiar requirements of newspaper reproduction was suggested by J. Homer Winkler, of the Graphic Arts Division, Battelle Memorial Institute, at the October 1945 Great Lakes Mechanical Conference. The conference adopted the idea unanimously. Charles M. Kirk, stereotype superintendent of the Detroit *News*, enlisted the support of the three Detroit daily newspapers, with the result that everyone who attended the meeting on January 29 felt that agency executives, photo-engravers and plate and mat makers received great benefit.

Resolution Suggests Nation-Wide Action

With resounding "Ayes!" a resolution presented by Jacob Albert of the Detroit *News*, was passed by those in attendance at the Detroit meeting. The resolution was directed to nine national associations and two Detroit groups. The ANPA was asked to assume responsibility for the functioning of a standards committee to be appointed from among the membership of the associations enumerated.

The committee, under the sponsorship of the ANPA, would then study the problems of newspaper printing and set up standards for each of the processes involved in the production of newspaper advertising.

The problems for committee study as listed in the resolution are as follows:

(1) The most suitable balance of light, middle and dark tones in art work and photography.
(2) The proper etching depths in the various tones of photo-engravings.
(3) The general specifications of type faces best adapted to use in text, reverse plates and double printing.
(4) The recommended care in producing and finishing pattern plates for mats and electrotypes for the most faithful production.
(5) The recommended inspection of material received by newspapers and the procedure in calling faulty material to the attention of advertising agencies and advertisers.

Kirk Presents Case for Newspapers

The newspapers' case regarding poor electrotypes and stereo mats was graphically presented at the opening of the meeting by Charles M. Kirk, stereotype superintendent of the Detroit *News*. He exhibited photostat blowups of newspaper advertisements taken from clippings as actually printed in Detroit newspapers. Chief defects with electros and mats as demonstrated by Mr. Kirk were shallow depths in the open spaces, shallow depth in bowls of type characters, shallow etching depth in halftones, too fine screen halftones, insufficient space between and shallow depth of parallel rule borders.

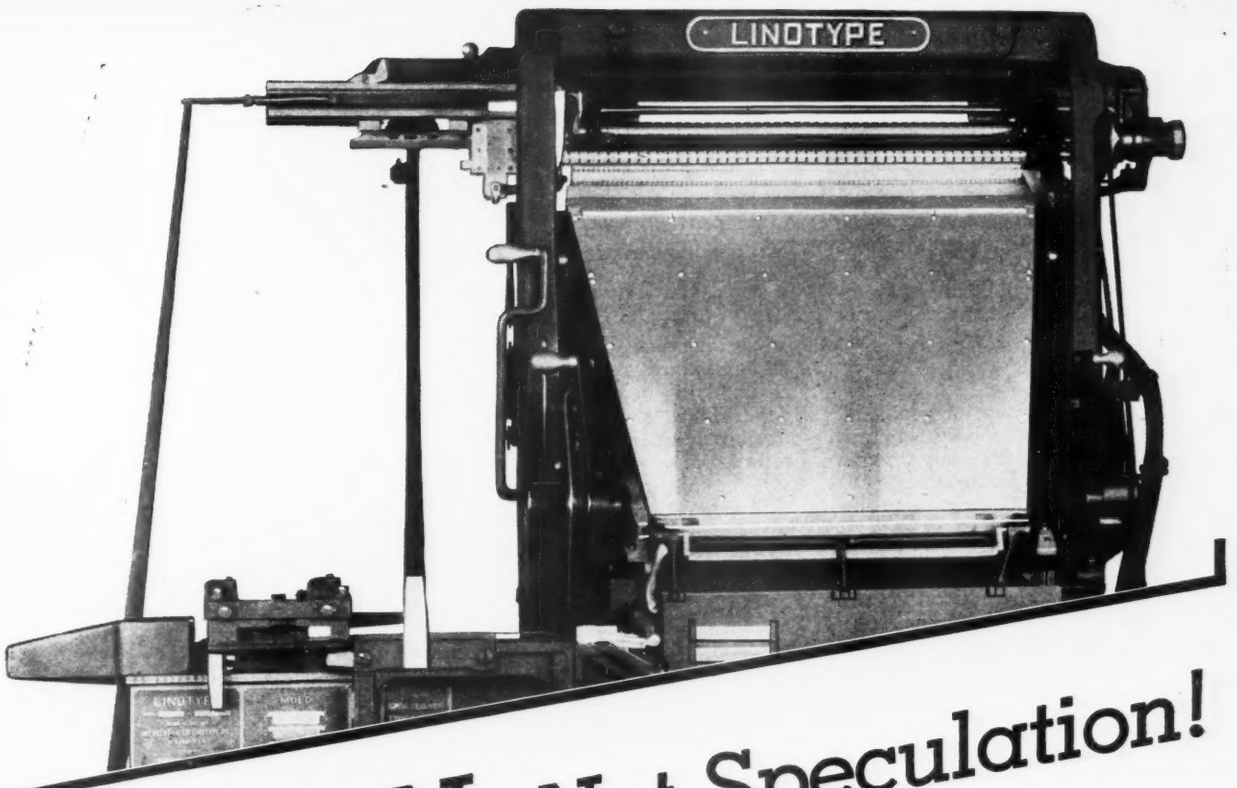
Positively, Mr. Kirk's discussion-exhibit demonstrated that many plate and mat-makers pay no attention whatever to the requirements of newspaper advertising plate making. The general criticism about electrotype and stereo mat makers is that they just don't fabricate plates or mats good enough for newspaper reproduction.

(*Continued on Page 30*)

MAJOR FAULTS
In Newspaper Advertising Mats and Plates

- Art work designed for large ad plates used for small ad plate reproduction not coarse enough to reproduce well in small size, and in addition lack of compensation for high shrinkage in newspaper stereo mats.
- Shallow depth in photo-engravers' halftone plates.
- Too fine a screen in engravers' halftone plates.
- Shallow depth in bowls of type characters in mats.
- Shallow cold rolled mats instead of direct pressure baked mats.
- Shallow depth in white areas—mats and electros.
- Not enough white space depth in, nor sufficient width between rules in borders in mats and electros.
- Electros supposedly planed to 0.105 in. thickness vary from 0.001 in. to 0.109 in. from corner to corner.

- It is proposed to eliminate these and other imperfections in newspaper national advertising plates and mats by (1) Holding regional technical meetings in metropolitan centers at intervals so as to keep all concerned in any way with plate and mat reproduction informed about requirements for best result. (2) Resolution passed at the Detroit Better Printing Conference seeks to interest national associations through ANPA supervision, to formulate a set of specifications for ad copy, photo-engravings, and making plates and mats. (3) Continuing periodical technical meetings to educate future advertising agency production personnel, and periodical distribution of standards bulletins.



ACTION—Not Speculation!

Action is thought become concrete. Today's Linotype is the result of experience to which is added the engineering skill of a great organization. Step by step, through nearly two-thirds of a century, Linotype has converted the changing needs of composing rooms into the present comprehensive line of Blue Streak Linotypes—the finest ever made available to anyone.

THERE'S A LINOTYPE FOR EVERY NEED!

LINOTYPE · BROOKLYN 5, NEW YORK

Linotype Memphis Medium and Bold Italic

(Continued from Page 28)

Perhaps newspaper management itself may be somewhat to blame for the present advertising plate and mat situation. But there isn't any reason why an educational campaign conducted through regional meetings will help to eliminate the newspapers' problem. In addition, if the ANPA and the various organizations designated in the Albert resolution take up the task of creating specifications for newspaper advertising plates the problem will be largely solved. The continuing effectiveness of the standards, however, will be nil if periodical distribution of the standards is not made to newspapers, advertisers, advertising agencies and to plate and matmakers.

A visual demonstration of good and bad newspaper plate reproduction was presented to the Detroit meeting through the courtesy of the Youngstown (O.) *Vindicator* and Wilford Coddington, composing room superintendent. This consisted of four pages, full newspaper page size. Comparative examples of good electro and mat reproduction were printed side by side. Most of the faulty examples were caused by shallow mats or electrotypes.

Newspapers Can Specify

It is noteworthy that national magazines specify how advertising plates shall be made. If magazines can do this, what is to prevent newspapers doing the same thing? One doesn't like to think that plates or mats for newspaper reproduction require temperamental treatment, or that the newspaper printing process is particularly deficient in technique. Rather would we think of the newspaper advertising plate as a commodity that must be made to standard specifications just the same as when a manufacturer orders a quantity of screws or nuts. If they are not furnished as specified, the order is rejected.

One of the weaknesses of newspaper production is the injection of individuality in the manufacturing process. In making that statement we don't mean to indicate that all newspapers should look alike. For instance, take the problem of wide variation in mat shrinkage. Management and production executives might as well admit that it complicates the printability of the national advertising plate. Mat shrinkage used in various papers may be ½ in., ⅝ in., ¾ in., 1 in., or 1¼ in. crosswise of the page. Thus, if it is determined to be feasible by the proposed standards committee, perhaps plates could be made to suit the maximum 1¼ in. shrinkage. In this way, the papers employing less shrinkage would be assured a reproducible plate. We are not prepared, however, to discuss the pleasing appearance of that plate when printed in a paper employing the minimum shrinkage of ½ in. There may be complications on that score.

The Program

The program presented by the three Detroit newspapers in the auditorium of radio station WWJ, consisted of a statement regarding the purpose of the meeting by Charles Kirk. Mr. Kirk then presented *Poor Impressions*, a dramatic skit illustrating the psychological results of bad newspaper advertisement printing. The play was directed by William Koste and enacted by WWJ players.

Mr. Kirk then presented an analysis of poor advertising plate and mat reproduction as discussed before in this article.

Harry Rowe discussed *How to Get Good Mats and Electros*. Mr. Rowe is president of Rapid Electrotype Co. and general manager of Northern Electrotype Co., Rapid's Detroit branch. Mr. Rowe stated it to be his belief that good electrotypes or mats can be made only from good engravings and that the original engraving or pattern is about 95% responsible for the quality of the reproduction.

He stipulated that for 55 or 60 line halftone screen, engravings should be 0.008 in. in the highlights, 0.005 in. in the middletones, and 0.003 in. in the shadows or near solids. The reason for this type of engraving, said he, is obvious when you consider the process of removals from the original to the printed newspaper page.

Mr. Rowe quoted figures obtained from a national survey among 268 mechanical superintendents of the country's largest newspapers. Of the comments received, three things stand out as causing most difficulties in the handling of ad electros: (1) Ad electros are often too shallow or lack sufficient depth; (2) Plate material received from different sources varied too much in thickness, and (3) Improper packing for shipment accounted for material received in damaged condition.

Many mechanical superintendents reported that mats were generally too shallow and expressed a preference for direct pressure mats. "Again," said he, "we find the greatest single difficulty goes back to the depth of the original engrav-

(Continued on Page 30)

Equipment Price Increase

(Continued from Page 24)

I. *Typesetting, Type-Composing and Composing Room Machinery:*

A. Typesetting, type-composing and type-casting machinery:
- Slug line (linotype and similar) machines
- Single character (monotype and similar) machines
- Lead slug and rule casting machines
- Typefounding machines (for type casting)
- Matrices (for typecasting and typecasting machines)

B. Attachments and Complementary type-casting equipment:
- Magazine and matrix cases
- Molds
- Automatic metal feeders
- Lino-saws and similar saws for attachment to typesetting machines
- Space band cleaners
- Plunger cleaners
- Slug profilers
- Shell-high slug shears
- Type surface finishing machines

C. Saw Trimmers and Mitering Machines:
- Hand lead, slug and rule cutters
- Saw trimmers
- Printers' band saws
- Hand miterers
- Power miterers

D. Other Typesetting and Composing Room Machinery:
- Remelting furnaces for type metal
- Remelting molds for type metal
- Broaching machines, rule form

II. *Composing Room Equipment (Other Than Machinery):*

The following storage cabinets:
- Type and type matrix cabinets, type case frames or stands, and type cases
- Galley cabinets and galleys
- Page form lift and storage cabinets
- Cut storage cabinets
- Material cabinets

- Imposing tables and imposing surfaces
- Foundry type, rules, leads, slugs, borders and ornaments
- Typographic numbering machines (typographs)
- Form transfer trucks
- Chase racks
- Lock-up "furniture" (accessories and devices for locking up printing forms)

III. *Photoengraving and Lithographic Platemaking Equipment:*

A. Photographic equipment:
- Gallery cameras
- Dark room cameras
- Overhead cameras
- Vertical cameras
- Strip-film cameras
- Vacuum backs for cameras
- Photo-composing machines (step and repeat machines)
- Projectors for use in photoengraving and lithographic plate making
- Photo lettering machines
- Half-tone screens
- Screen holders
- Copy boards
- Diaphragm controls

B. Other Photoengraving Machinery and Equipment:
- Temperature control sinks
- Developing tanks
- Negative drying ovens
- Powdering cabinets
- Monel silver baths
- Bath holders
- Silver bath evaporators and evaporating dishes
- Ben Day machines
- Photoengravers' whirlers
- Burning-in ovens
- Etching machines
- Routing machines
- Beveller and trimmer, combination
- Planing machines

C. Other Lithographic Platemaking Equipment:
- Plate graining machines
- Plate coating machines (whirlers) (lithographic)
- Contact printers
- Vacuum printing frames
- Stripping tables
- Rub-up tables
- Opaquing tables
- Lay-out, register and line-up tables

IV. *Electrotyping and Stereotyping Machinery and Equipment:*
- Matrix rollers
- Direct pressure matrix moulding presses
- Matrix shrinkers and formers
- Matrix drying tables
- Matrix scorchers:
  - Flat stereotype casting boxes, hand operated
  - Curved stereotype casting boxes, hand operated
  - Tubular stereotype casting boxes
  - Automatic stereotype plate casting machines
- Plate shaving machines—flat, curved, tubular
- Tail cutters or trimmers—curved and tubular
- Plate routing machines—flat, curved, combination flat and curved
- Plate bevelling machines
- Plate mortising machines
- Curved plate shipping blocks
- Stereotype metal melting furnaces
- Stereotype form tables
- Wax tables
- Wax shaving machines
- Wax ruling machines
- Electrotype moulding presses
- Wet leading machines
- Plate curving machines
- Cooling tables
- Plate depth gauges
- Plate thinning machines

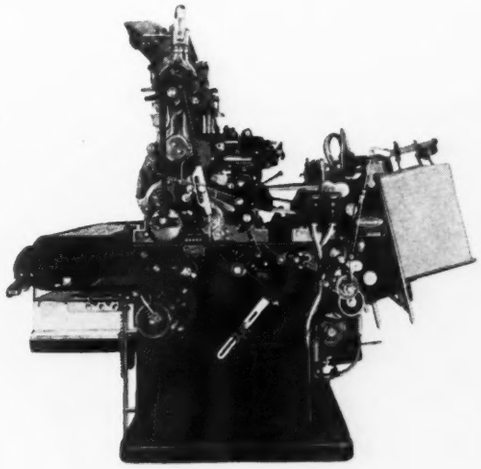
(Continued on Page 32)

A LETTERPRESS printer for many years, Mr. C. D. Wagar, President, Golden West Printing Co., Oakland, California, added offset to his plant before the War. Five years ago he put in an ATF Big Chief offset press. *"We are well pleased with both our Kellys and the Big Chief,"* he writes. *"We have a balanced shop, and both processes have their place in our business."*

ATF Chiefs and ATF Kellys make an ideal team for the modern printer. Both are built from a practical understanding of printing plant conditions. The Chiefs, like the Kellys, are provided with every facility to make the pressman's work more efficient, productive, and profitable.

Now that civilian needs can again be met, ATF has everything for an offset department from darkroom to pressroom. Right now, any ATF press can be reserved for future delivery. Ask the man who represents ATF for a copy of "Offset Answers," and to tell you all about the ATF Civilian Priority Delivery Plan, or write to us direct.

ATF CHIEFS
are made in three sizes:
14x20; 17x22; 22x29



ATF

American Type Founders

200 ELMORA AVENUE, ELIZABETH B, NEW JERSEY

We are cooperating with the Committee for Economic Development. There are C.E.D. local committees in 2800 counties and communities. Consult the nearest one now, for help in speeding reconversion and providing maximum employment.

Equipment Price Increase

(Continued from Page 30)

Saws, trimmers, combination
Block levelers

V. *Presses:*

A. Letterpress (typographical, relief):
(1) Sheet-fed:
Platen-job, hand fed and automatic fed cylinder-job automatics up to 22″ x 28″ sheet size
Flat-bed cylinders over 22″ x 28″ sheet size:
Single cylinder, hand fed and automatic fed
Two-color presses
Perfecting presses
Rotary presses
Proof presses:
Hand-operated
Power-driven
Envelope presses and imprinting machines
Textile bag printing presses
Thermographic (raised printing) presses

(2) Web-fed and roll-fed presses:
Newspaper and magazine:
Unit type
Multi-color
Tubular
Flat-bed perfecting web
Other:
Platen web presses
Aniline ink presses
Tabulating card presses
Tag printing presses
Paper can printing presses
Textile bag printing presses

B. Offset, Lithographic (including photo-lithographic, planographic):
Sheet-fed, up to 22″ x 28″ sheet size, and over 22″ x 28″ sheet size
Stone lithographic presses
Web-fed presses
Offset proving and transfer presses

C. Gravure (Intaglio):
Platen engraving presses, hand-fed and automatic fed
Power plate engraving presses
Die-stamping and embossing presses
Cylinder sheet-fed gravure presses
Web-fed newspaper and magazine presses
Rotogravure presses
Wallpaper presses
Metal foil presses

D. Cutting and Creasing Presses:
Platen cutting and creasing presses
Cylinder cutting and creasing presses
Combination printing and cutting and creasing presses

E. Accessories and Attachments for Printing Presses, and Complementary Press Room Equipment:
Automatic sheet feeders
Reels, press magazine
Web tension devices
Automatic web pasters
Paper roll stands
Sheeting devices for web presses
Automatic extension pile deliveries
Rewinding machines
Automatic paper lifts
Feeder and delivery tables
Jackets, cutting and creasing press
Ink fountains, portable
Ink distributors
Ink agitators
Wash-up devices, roller
Fountain dividers
Ink drying and ink setting devices
Non-offset spray equipment
Punching, perforating, scoring and numbering attachments
Chases
Plate mounting bases
Electric die-heater attachments
Paper seasoners and conditioners
Varnishing machines
Bronzing machines
Newspaper conveyors
Paper roll trucks

VI. *Bookbinding and Printers' Finishing Machinery and Equipment:*

A. Paper Cutting Machinery:
Hand lever guillotine cutters up to 30½″
Power driven guillotine cutters, 30½″ and larger
Trimmers, single knife, three knife and continuous
Bookbinders shears
Knife grinding machines

B. Paper Folding Machinery:
Sheet folders, up to 22″ x 28″, and over 22″ x 28″
Newspaper folders for attachment to flat-bed cylinder presses
Automatic feeders for folding machines

C. Gathering and Inserting Machinery:
Gathering machines
Inserting machines
Gang stitchers
Stitcher feeders
Perfect binders
Pamphlet gathering tables

D. Paper Ruling Machinery:
Pen ruling machines, single and "L" type
Disc ruling machines, single and "L" type
Automatic feeders for ruling machines
Numbering and paging machines

E. Edition Binding Machinery:
Finders' board rotary cutters
Feeders for binders' board cutters
Bookbinders' cloth cutters
Corner cutting machines
Case making machines
Cover bending machines
Cover cleaning machines, foil
Stamping and embossing presses
Corner cutting racks
Bookbinders' sewing machines (for book stitching)
Signature bundling presses
Smashing machines
Standing presses
Letter boards
Back forming machines
Rounding and backing machines
Nipping machines
Forwarding machines
Backlining and headbanding machines
Book back-gluing machines
Casing-in machines
Indexing machines
Stippling and roughing machines
Tipping machines
Stripping machines

F. Other Bindery and Finishing Machinery:
Banding machines
Mechanical binding machinery:
Plastic binding machines
Spiral wire binding machines
Other mechanical binding equipment
Die-cutting presses
Label cutting machines
Collating and interleaving machines
Jogging machines
Paper drilling machines, single and multiple drill
Paper punching machines, single and multiple punch
Cornering machines
Paper perforating machines, round hole and slot:
Vertical (straight-line) perforators
Rotary perforators
Postage stamp (photo-electric) perforators
Fixed gauge type paper pad counters
Wire stitching machines (book and pamphlet types) single and multiple head, not including tackers and staplers.

VII. *Printers' Hand Tools:*
Line gauges
Composing sticks
Quoins and keys
Mallets
Planers
Press room, plate-making and bindery hand tools

VIII. *Repair and Replacement Parts:*
All repair and replacement parts for the machinery and equipment listed above, except saws and knife blades.

Upon application by a manufacturer, OPA may include in this definition additional machinery or equipment if it appears to be specifically designed for use in the printing trades.

(d) The maximum prices for sales of printing trades machinery and equipment by resellers shall be determined as follows: The reseller shall add to the

Brief Word Picture of Industry Conditions*

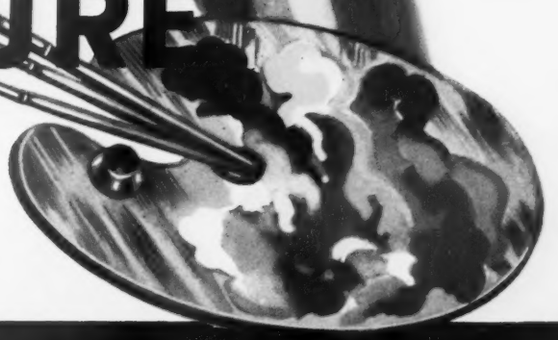
THE industry has a manpower shortage of 30,000. Equipment houses have such enormous backlogs of orders that they are on the point of refusing to accept further requests. The backlog includes unbelievably large orders from foreign countries. Delivery of presses, composing machines, bindery equipment, and every other kind of mechanical device we use is being delayed by lack of foundry facilities. Paper is scarcer than ever and the prospect is that it will continue scarce for a long time to come. The pressure of our customers is certainly no less than it was at the peak of the war. New customers are coming into the field. Naturally, they do not even consider that they are in business until the printer has delivered office supplies and sales literature. War plants are converting to the production and sale of peacetime products and they must look to the printer to get them started. So, the old presses which have been pounding away day and night for 5 years without repair, almost without care, must keep on grinding it out.

*Excerpt from address delivered by Hon. A. E. Giegengack, U. S. Public Printer, before Associated Printers & Lithographers, St. Louis, Mo., January 22.

Another distinguished personage to visit the offices of *Printing Equipment Engineer* recently was William Edney, sales manager of Sidney Cooke, Ltd., Melbourne, Australia. Mr. Edney was here to investigate and order certain printing equipment and supplies for his firm. At present, he is traveling to London and Paris and expects to complete his visit in the United States before returning to Australia. Mr. Edney is now and has been president of the Victoria Club of Printing House Craftsmen for 11 years. He is well known among many prominent Craftsmen in the U. S.

10 YEARS IN THE MAKING

Here Next Month!



THE GREATEST ACHIEVEMENT *IN* MULTI-COLOR

STANDARD *SPEEDRY* ROTOGRAVURE

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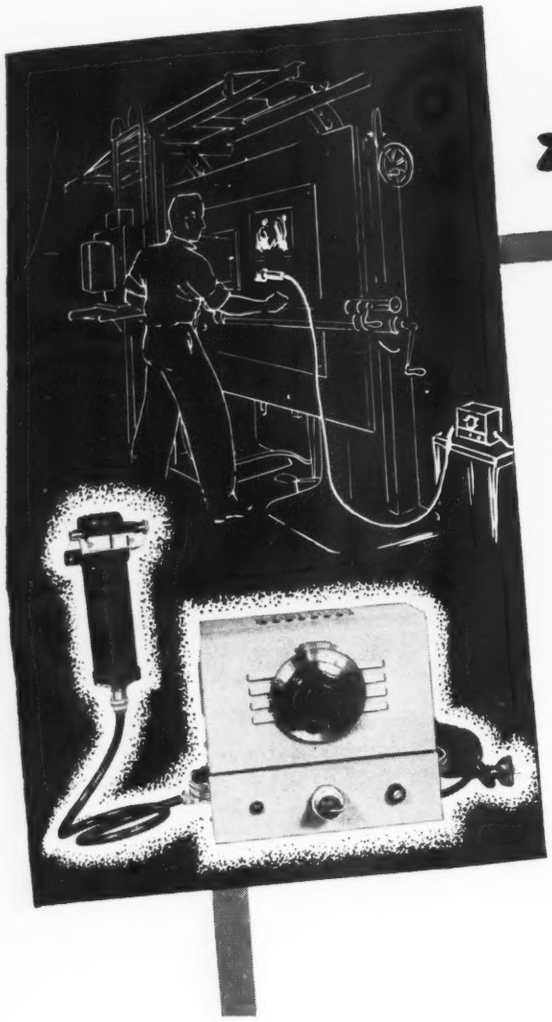
THIS NEW EXPOSURE CONTROL

MEASURES ACCUMULATED LIGHT ELECTRONICALLY



No light source is absolutely constant. As a result, ordinary timing devices for measuring exposure cannot be accurate, for they do not take light variations into account.

The Hurletron Exposure Control operates on a different principle . . . it meters *accumulated* light. Your subject before the camera is exposed to light measured in foot-candles. It is given a predetermined *amount* of light, not just a number of seconds of time. Result . . . exposure controlled to the nth degree.

HERE'S HOW IT OPERATES

The Hurletron Exposure Control is easy to install and simple to operate. The light-sensitive indicating unit is placed in the same plane as the subject being exposed. The control unit may be placed at any convenient remote point and the light source is connected to it. A dial setting, previously determined, automatically turns on the light source. The accumulator gathers given units of light and when the desired amount of light is reached, as indicated by the dial setting, the light source is automatically turned off. If preferred, the device can be equipped to close the camera shutter at the same instant.

- **Automatically compensates for light variations**
- **Prevents errors in exposure**
- **Easy to install**
- **Simple to operate**
- **Consistently accurate**
- **Provides automatic controlled exposure in the making of negatives for Offset Lithography Rotogravure and Letterpress and for Commercial Photographic work**

BUILT FOR A LIFETIME OF SERVICE

Here's a scientifically designed, ruggedly constructed precision instrument that will earn its cost in a remarkably short time. Just note these heavy-duty specifications:

- 5 tube amplifier (1 duo-triode, 1 VR-150, 1 6X5, 1 2050)
- Special rugged escapement, finest construction, all stress portions oversize and made of hardened materials.
- Accumulator of aluminum; light-proof; not damaged by shocks and blows; adjustable light orifice.
- Long-life photo tube, retains sensitivity for periods far in excess of normal expectancy.
- Five pound solenoid for escapement actuation.
- Ten ampere switch.

Hurletron Exposure Controls are available for immediate delivery. Write today for complete details and prices.

HURLETRON
Automatic *Electronic*
EXPOSURE CONTROL

ELECTRIC EYE EQUIPMENT COMPANY 8 West Fairchild Street, Danville, Ill.

maximum net price he had in effect to a purchaser of the same class, just prior to the issuance of this order, the amount in dollars-and-cents, by which his net invoiced cost has been increased, due to the increases in maximum prices of manufacturers provided by paragraph (a) of this order.

(e) Every manufacturer of printing trades machinery and equipment shall notify each person who buys such machinery and equipment for resale of the dollars-and-cents amount by which this order permits the reseller to increase his maximum net prices.

(f) All prices established under paragraph (a) of this order shall be subject to the same discounts, credits and allowances in effect to any purchasers and classes of purchasers just prior to the issuance of this order.

(g) Notwithstanding any of the provisions of this order, a manufacturer of printing trades machinery and equipment may charge and collect the maximum prices for sales of his products which he had in effect just prior to the issuance of this order.

(h) This order may be amended or revoked at any time by the Price Administrator.

This order shall become effective January 9, 1946.

Issued this 9th day of January 1946.

CHESTER BOWLES,
Administrator

OPINION ACCOMPANYING ORDER NO. 568

UPON the advice of the Industry Advisory Committee, a survey was made of the printing machinery industry. Approximately 50% of the known manufacturers were used as a sample, but despite repeated efforts of the OPA and of members of the Industry Advisory Committee, workable reports were obtained from only fifteen members of the industry. Since these companies represented a substantial portion of the industry sales volume, a wide geographical distribution and a fair average of companies of all sizes, however, the Industry Advisory Committee recommended that the sample be accepted as representative of the industry.

The industry as a whole, during the preceding year, manufactured far less than 50% of its normal peacetime products and this reduction in its production clearly resulted from governmental restrictions on the manufacture of the products and on the use of materials and facilities. Since V-J Day, and the resulting relaxation of governmental controls, the industry is now embarked on a wide program of reconversion to its peacetime operations. For these reasons, the sample of the industry was used to compute an industry-wide increase in maximum prices based upon the 1941 cost figures adjusted for intervening lawful changes in the levels of materials prices and basic wage rate schedules as provided in Section 30 of Revised Maximum Price Regulation 136 for reconverting industries. The industry's average net operating profit for the base years 1936-1939 was found to be 8.8% of sales and applying this margin to the adjusted cost, the OPA has found that the maximum prices for sales of printing machinery should be increased by 12%. This order, therefore, issued pursuant to Section 30 of Revised Maximum Price Regulation 136 provides for the application of this factor to maximum prices of printing trades machinery and equipment.

That part of the printing trades machinery and equipment which has no frozen price or which is not a modification of frozen priced machinery is priced under a formula provided by Section 10 of Revised Maximum Price Regulation 136. Since the necessity for price relief is based upon figures showing October 1, 1941 costs and since the formula permits the use of current costs of parts and subassemblies and the application of selling and administrative expense ratio to a cost inflated not only by current prices of parts, but also by current labor inefficiencies, it would be obviously improper to permit the increase factor to be applied to prices established by this formula. The order, therefore, provides that a manufacturer may use the increase factor upon a formula price only if he can satisfy the OPA that his formula is one which adjusts administrative selling expense to the 1941 ratio to sales and that he is in position to use strict 1941 costs for all parts. The Industry Advisory Committee advised that in most instances manufacturers in this industry would be able to use such a formula and to ascertain their 1941 costs for parts and subassemblies. In the exceptional case where a manufacturer is unable to follow this method, the increase factor will not be applicable to the formula price.

It appears that a large volume of list price machinery and equipment in this industry is sold by the manufacturers both direct to users and through resellers' channels in the same market. In considering absorption of all or part of the increase of the manufacturers' prices granted by this order, the Administrator recognized that the resellers' margins (discounts) vary from 5% to 40% of the price, depending on the type of equipment and reseller in question. A requirement of uniform absorption would, therefore, have a very uneven impact on various resellers and reduce the margins of some of them below the average expense rate applicable to their trade. The alternative — differential absorption for the various discount classes—would involve considerable administrative difficulties. Therefore, and in view of the relatively small contribution that absorption by resellers in this case would make to the stabilization program, such absorption was considered impracticable. Accordingly, this order permits resellers of printing trade machinery products to increase their prices by the dollars-and-cents amount by which their costs have been increased by reason of the increase fac tor permitted their suppliers.

Due to the fact that these resellers customarily sell off of the manufacturer's list and the manufacturer also sells direct off his list, the dollar pass-through would result in an unbalance of price structure unless some adjustment in the use of the increase factor is made. The order, therefore, also provides for an automatic method by which a manufacturer may increase his price to resellers above the 12% increase factor while at the same time he reduces his increase factor upon his direct sales below that 12%. The use of the table upon which the manufacturer may do this automatically, if properly applied to his customary average discount for the product and customary volume of sales through resellers will result in the recovery by such a manufacturer of a 12% average increase in his total sales. The order provides that manufacturers who use this automatic provision shall report to the OPA quarterly in order that they may show that they have properly applied the table. The order also provides that such manufacturers may obtain a price adjustment under Supplementary Order No. 142 to balance their price structure in some manner other than provided in the table.

The order lists in full all of the known machinery and equipment made by this industry and the increase factor is applicable to sales of any of the listed machinery when designed and sold for use in this industry. This limitation is necessary because of the fact that some of the listed machinery is of a type which is manufactured and sold for other purposes and for which no necessity for price relief has yet been indicated. While the Industry Advisory Committee has approved the list as being complete, it may be that some manufacturer makes or will make a machine other than those listed expressly for use in the industry. The order, therefore, also provides that the OPA will amend this list upon application by the manufacturer which will show that his machine is of a type which should have been included in the original list.

Issued this 9th day of January 1946.

CHESTER BOWLES,
Administrator

Papers Combine Mechanical Equipment in One Plant

The printing facilities of the St. Petersburg (Fla.) *Morning Times* and *Evening Independent* have been combined into one plant. The papers, however, will continue to be competitive with respect to editorial, advertising and circulation. Announcement was made in December of the organization of the News Printing Co., which is jointly owned by the two daily newspapers. The new corporation has leased existing composing, stereotype and press equipment and manufacturing space from the two newspapers. Nelson P. Poynter is president of the new company; L. C. Brown is chairman of the board; M. D. Ulrich is executive vice president; the treasurer is C. A. Veasey, and Vivian Selter is the secretary.

Speaks Plainly, does U. S. Public Printer with respect to proposed diversion of work that properly belongs to printer

(Abstracted from address delivered by Hon. A. E. Giegengack, U. S. Public Printer, before the Associated Printers & Lithographers, St. Louis, Mo., January 22, 1946.)

THERE is a big problem that faces us (the Joint Committee on printing and the Government Printing Office) which we must do something about if we are not to lose a lot of desirable business. I believe it is of equal danger to the commercial industry.

About a week before I left Washington, I had an appeal from the War Department, forwarded through the Joint Congressional Committee on Printing, to permit it to use substitute printing methods on a large class of our work—to take it away from us and put it into field reproduction plants. The Department claims to have developed a duplicating "master" at a cost of one-fifth of the commercial master. It alleges development of improved chemicals and better methods of operating multilith equipment. It insists that economy and Government interest will be best served by *de*centralization of the printing of forms, so that each installation can run what it needs. The argument is that stock piles can be reduced, transportation costs cut, obsolescence diminished and — most important — administrative schedules accomplished by this method.

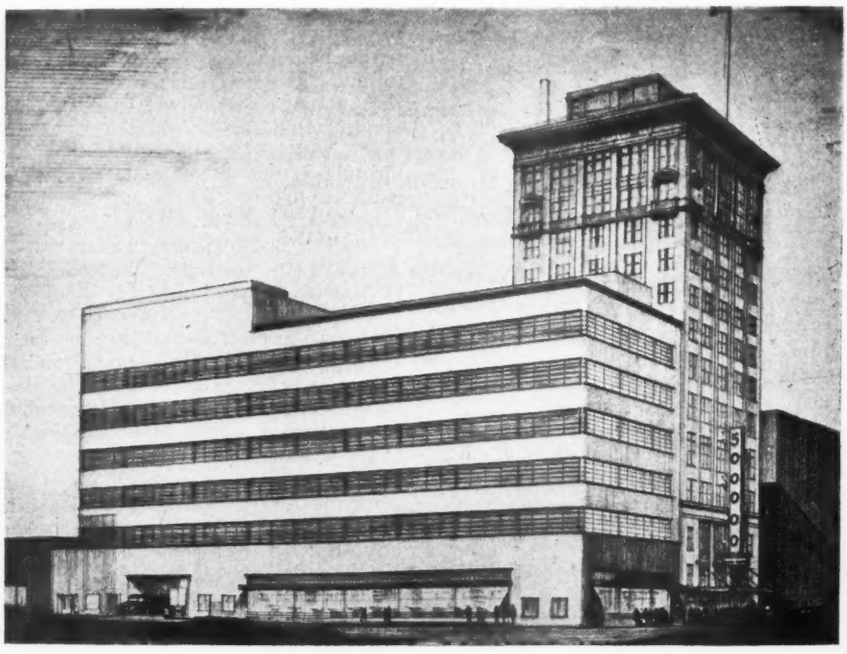
It is easy to see where this leads. If a part of our work goes out and we lose control of it, more and more will follow. It is the argument which has been used by the departments in wartime to build up printing plants in office after office, installation after installation. As the uneconomical system spreads, as each plant is oversold on equipment, the departmental operators begin to look about for other classes of work to keep the machines running. We have found many jobs being run one-up in quantities of millions.

This system of many Government printing plants has been a matter of concern to the Joint Committee on Printing and to me for some time. I have discussed it with the chairman of the committee many times during the war. In the emergency, authorizations for field plants have been granted even though there was a recognized possibility of waste and uneconomical operation. Nobody measures policies too closely in wartime. In the case I am speaking of, the principal argument advanced by the War Department is the need for speed in getting administrative material to company level. The Government Printing Office has shown how it can be done by contracting for simultaneous production, and during the war maintained a program that gave service far beyond the Army's best previous efforts. The departmental competitors for printing that is now legally done by the Government Printing Office are advancing many reasons for their desire to take over the work.

The growth of substitute printing methods, both within and without the Government, is a threat to every established commercial printer. The Government can, and will, take steps to control the use of substitute methods where it can be shown that they are not economical. We will see that the jobs go into commercial plants or the Government Printing Office when they belong there.

Your national organization, Printing Industry of America, is in sympathy with our determination to control the growth in number of Government printing and duplicating plants; the Bureau of the Budget's interest has been aroused; the Joint Committee is developing plans for closer control; and I think I can assure you that the Government will soon have the situation in hand.

There must be, on the part of the industry, an effort made to provide a service to your customers which will prevent them from going to duplication processes for material that properly belongs to the printer. The duplicating machine and the multilith have their proper place and function. That function is *not* long-run printing jobs.



R & T to Build New Plant

PLANS for substantially enlarging and modernizing the Des Moines (Ia.) *Register* and *Tribune* plant were disclosed at the annual stockholders' meeting of the newspaper company. Gardnes Cowles, jr., president, said architects and engineers are now at work on plans for the erection of an addition adjoining the present plant on the north along Eight St. between Locust and Grand Ave.

The addition will be 82 by 132 ft., seven stories in height. Upon its completion the present *Register* and *Tribune* annex will be torn down and replaced with a modern 7-story building which, with the new addition to the north will be joined to the main present *Register* and *Tribune* building to form a modern, air-conditioned newspaper plant 50 per cent larger in productive capacity than the present plant.

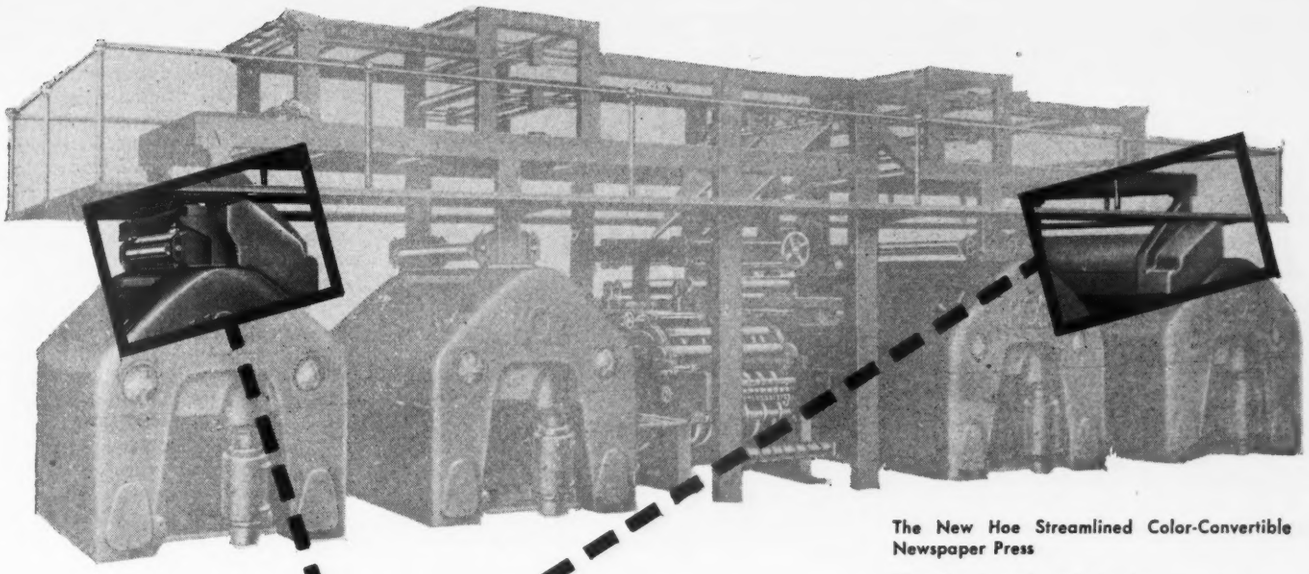
Mr. Cowles said construction will be started this spring if it can be done without interfering with the new home building in Des Moines.

"The housing shortage in Des Moines is so acute," he said, "it should have priority over every type of building. We are studying the situation to make certain we will not in any way delay the housing program."

New Press Room

The presses will be installed in a new pressroom extending along Eighth Street. Larger windows will permit observation from the street.

"We hope when the new plant is completed we will have as efficient a newspaper plant with as fine working conditions as any in the country," Mr. Cowles said.



The New Hoe Streamlined Color-Convertible Newspaper Press

View showing color units in place

There's no doubt about it

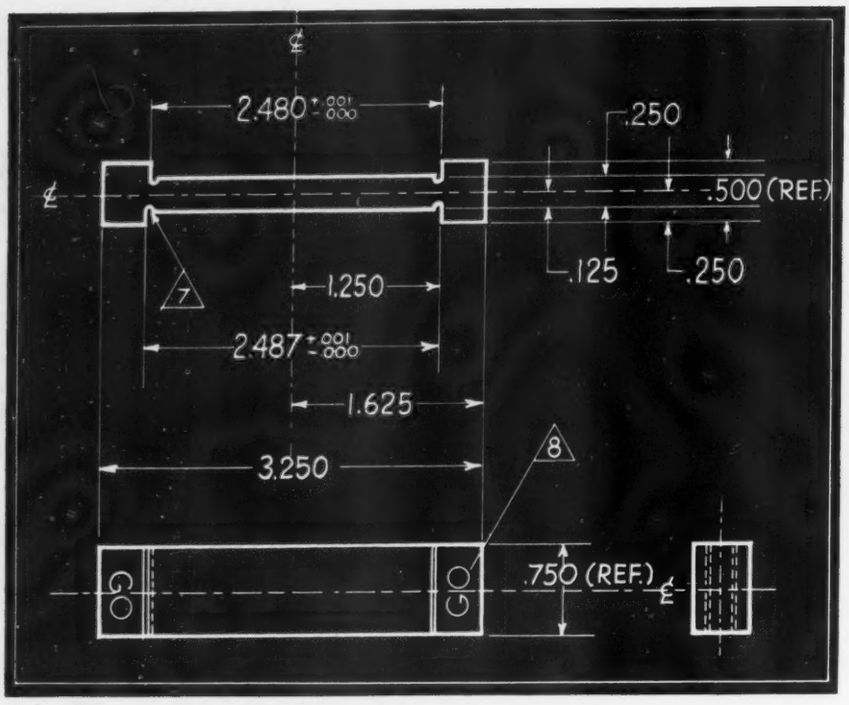
Extra color printing cylinders are relatively simple additions to the new Hoe Color-Convertible Newspaper Press, either while it is being built or at any future time. The reason is that every advance preparation has been made in the press design to allow ready attachment of all color-providing mechanisms — not only color cylinders, but couple and unit reversing parts, dual ink rails, etc.

There's no doubt about it, the new Hoe Color-Convertible is a press that provides for maximum color growth at minimum additional investment.

Call in a Hoe representative to give you the complete details.

R. HOE & CO., INC., 910 EAST 138TH STREET NEW YORK 54, N. Y.

Branches: **BOSTON • CHICAGO • BIRMINGHAM • SAN FRANCISCO**



The original drawing for line-composing machine slug snap or limit gauge was prepared by the designer of the gauge, Harvey W. Spanyers. This gauge can be made in two or more lengths. One size can be made to 15 picas as shown in the diagram. This is used for testing slugs that have been trimmed by composing room saw-trimmers, Mohr line-slug saws and Rouse bandsaws. Additional gauges can be provided for testing slugs of fixed length where considerable composition is done regularly. Example: 12 pica slugs in newspaper composition; a different measure for directories, etc.
The following notes will be helpful to the reader in preparing to make one or more gauges: (1) All dimensions are given in inches after chrome plating the gauge. (2) Material is 8640 steel; Rockwell hardness, C33, C38. (3) Stock Bar, ½ in. by ¾ in. by 3¼ in. (4) Tolerance, plus 0.010 in., minus 0.010 in. except as noted. (5) Machined surfaces No. 3 smooth finish. (6) Break sharp edges max. 0.020 in. R. (7) Provide 0.016 in. relief radius, four places as shown. (8) Stamp GO where shown, stamp NO GO on opposite side.

Accurate Slugs Lengths Are You Getting Them?

IN ANY composing room where line-casting machines, Mohr and Rouse saws and any of the various makes of saw-trimmers are used, the length of the cast and the trimmed slugs should be checked regularly. The word "cast" is used to mean those slugs of narrow measure which are produced in quantities from a mold in which the left-hand liner determines the ultimate slug length. Ever since L. W. Claybourn, Horace Hacker and Vandercook & Sons have been espousing accuracy in composing room manufacturing operations, many executives have become conscious of the need for precise measurement of the products turned out by the various machines mentioned above. For a long time, the Mohr Lino-Saw Co. has furnished with its line-composing machine saws a snap or limit gauge with which to test the 15 pica length of slugs cut by its machines. When this measure is cut accurately, it follows that all other measures will be accurate. In a number of instances, composing room machinists have adapted the same idea for checking the setting of gauges on other metal-cutting equipment

In any trade composition, commercial, book or newspaper composing room it is a good idea to check slug lengths from time to time as they come off the machine. The reason is that in the case of frequently used mold liners the liners become worn in time at the locating means. The wear or misfit occurs simply because of frequent handling when changing liners. In the case of narrow-measure liners, there is a tendency for the ejection movement of the slug to exert friction against the end of the left-hand mold liner with each casting of the slug. In time, this repeated strain against the end of the mold liner will cause a slight looseness in the key (Linotype) or the dowel pin (Intertype) so that with each slug ejection the mold liner will protrude slightly from the mold. Then, during the next advance of the mold against the vise jaws the left-hand liner will be impinged against the left-hand vise jaw, and so on *ad infinitum*. The eventual result will be a rounded corner on the left-hand liner which will cause a burr to be cast and extend from the end of the slug. Another cause for excessive slug length, is that in time, as the result of polishing of the end of both right and left-hand liners, the face of the liner will be shortened.

A gauge for determining slug lengths has been designed by Harvey W. Spanyers of the St. Louis *Post-Dispatch* composing room. The original drawing in the accompanying illustration was also executed by Mr. Spanyers. With reference to the gauge, Mr. Spanyers explains that critical dimensions have been determined by using 0.0138 in. equals 1 pt. A tolerance of plus or minus 1 pt. is held when using this gauge to test slug lengths.

In newspaper composing rooms, particularly, it is essential to hold slug lengths to close tolerance. The reason is obvious. The page dimensions are now figured rather closely because of newsprint conservation. The multiplicity of columns per page plus the number of plates across the press cylinder, even though each column were only slightly too wide would make the excess width across four plates a serious matter with respect to margins in the paper.

Carnegie Endowment Fund Progressing

The Printing Endowment Fund of Carnegie Institute of Technology has recently been endorsed by the Printing Industry of America, the New York Employing Printers Association, and the Graphic Arts Association of Illinois. These endorsements supplement previous approval by Graphic Arts groups throughout the nation, and are further evidence of united support by the industry of Carnegie's printing education program and endowment plan.

The goal of the Fund is $500,000 by July 1, 1946. For each dollar otherwise subscribed prior to that date, the Carnegie Corporation of New York has agreed to add two dollars to the Carnegie Tech Endowment Fund. Contributions and pledges of contributions received up to January 1, 1946, amounted to approximately $300,000. This leaves $200,000 to be raised by July of this year.

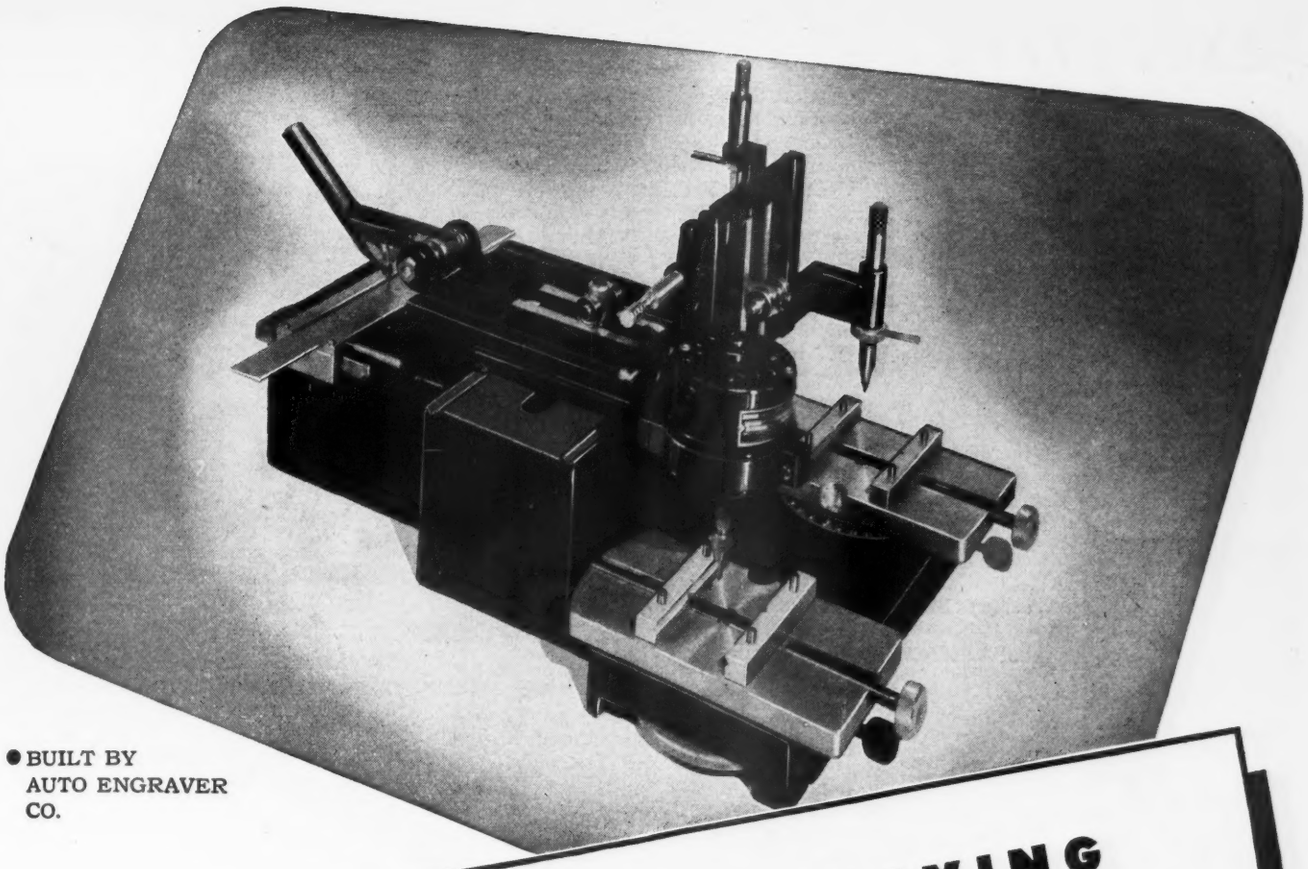
Persons wishing to make contributions or desiring further information should write to Glen U. Cleeton, Chairman, Printing Endowment Fund, Carnegie Institute of Technology, Pittsburgh 13, Pa.

New Folders

Two additions to the looseleaf catalog published by the Revolvator Co., refer to material handling equipment. The lift-truck folder in three colors (illustrated) describes the Model G Red Giant Hand Liftruck.

The other folder shows one of the Revolvator Portable Elevators, the hinged model with motor and herring-bone worm-gear drive combined with magnetic brake in one unit. This model may be furnished with either push button or chain control and with platform type to suit the particular use required. The telescopic frame can be obtained instead of the hinged model when desired. The Revolvator may be had with either revolvable or non-revolvable base.

Copies of these folders will be sent on request to Revolvator Co. direct, or through *Printing Equipment Engineer*.



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FOR *Easy* ENGRAVING

It appears easy for this SKF-equipped "Super-Cut" Auto Engraver to reproduce letters, numerals, names, designs, emblems and signatures at four speeds from approximately 3000 to 8000 r.p.m. It's easy, too, for SKF Bearings positively and accurately to position its moving parts. You see, SKF Bearings are synonymous not only with precision, but with long life, freedom from wear, low lubricant consumption and minimum maintenance costs as well. These are the advantages that also turn the trend for SKF Bearings on magazine and newspaper presses, routers, matrix rollers, folders, conveyors, etc. With SKF Bearings and designs, long and dependable performance is a certainty. 5965

SKF INDUSTRIES, INC., PHILA. 34, PA.

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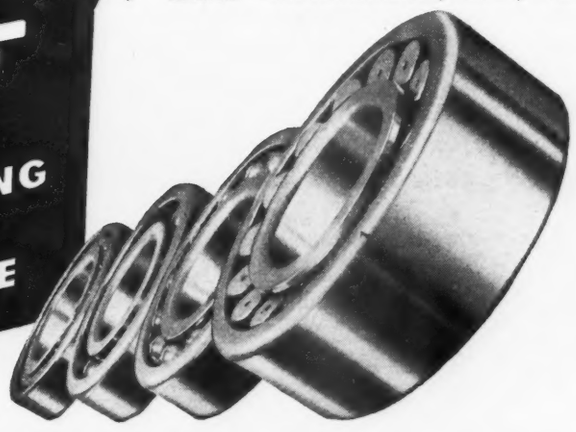
Puts the RIGHT BEARING in the RIGHT PLACE



EXECUTIVE ¶s

W. Floyd Maxwell, executive director of the Lithographers National Association, has announced the appointment of A. C. Lanchantin as head of the Association's industrial relations department, which assists members on labor problems and contract negotiations and maintains an employment bureau for association members. Mr. Lanchantin was formerly associated with the J. C. Hall Company, lithographers of Pawtucket, R. I.

At a recent meeting of the Board of Directors of Sun Chemical Corporation (formerly General Printing Ink Corporation), Charles R. Sherman was elected to the office of treasurer, to succeed Thomas A. Lenci who had resigned. Mr. Sherman has been been associated with the Corporation for many years.

Charles R. Sherman, treasurer, of Sun Chemical Corporation.

St. Elmo Newton retired as president of S. C. Toof & Co., Memphis, Tenn., and became chairman of the board in January. Toof Brown was elected president at a meeting of the board of directors in January. Mr. Newton had been president of Toof & Co. since 1923. Although he has not been in the best of health for the past several years he had felt it his duty to stay on the job until the war was over before retiring. Toof Brown, the new president, attended University of Virginia. He went to work for Toof & Co. in 1914. He has been vice president for 23 years. Toof Brown is past president of the Southern Graphic Arts Association, and former vice president of the United Typothatae of America. Other officers re-elected at the directors' meeting were: R. Bates Brown, St. Elmo Newton, Jr., and R. Rel Hughes, vice presidents, W. E. Wilson, treasurer, J. C. Bratton, secretary and George Lee Newton, manager of production. S. C. Toof & Co. was established in 1864.

Ralph Quinton has returned to Eagle Printing Ink Div., of Sun Chemical Corp., as New England sales representative with headquarters at 67 Batterymarch Street, Boston, Mass. Capt. Quinton served five years with the armed forces, forty-three months of which were spent overseas.

Recently the board of directors of the Mergenthaler Linotype Company re-elected Joseph T. Mackey president; Harry L. Gage, vice president in charge of sales; George W. Allison, vice president and general works manager; C. H. Griffith, vice president in charge of typographic development; Arthur J. Mackey, vice president in charge of the order division; Reginald W. Orcutt, vice president for overseas; Eugene B. Mirovitch, vice president for Latin America; George A. Schwaninger, treasurer; Charles F. Lucek, controller; John W. Reid, assistant secretary and treasurer, and William H. Moore, assistant secretary and treasurer. William J. Flather Jr., was elected vice president, and Martin M. Reed, former legal consultant, was elected secretary. Other members of the board are Ogden M. Reid, Frederic D. McKenney, Roy C. Gasser, George Hewitt Myers, Victor E. Walker, John R. Fell and Burnett Walker.

Francis M. Britton, former general manager of the Revere Journal Publishing Co., Revere, Mass., has accepted a position as advertising manager of the Boston Suburban Quality Newspapers. The opening of a new office at 89 Broad St., Boston, has been announced. Britton is director of the New England Newspaper Mechanical Conference. He has been active in the MENMC since its inception seven years ago.

The annual sales meeting of the Rapid Roller Co. was held at the Stevens Hotel in Chicago during the week of January 7. Merwin E. Hillison returned to the company after four years service with U. S. Marine Corp. He will represent the company in the New England States and Canada. James W. Colton, sales representative for the Rapid Roller Co., passed away recently after a short illness. For the past eight years he represented the company in a number of Midwestern States.

Wood Newspaper Machinery Corporation, Plainfield, N. J., announces that Anthony H. Miller has been transferred from the production department to the Eastern Sales Engineering Staff,

Anthony H. Miller transferred to Wood Newspaper Sales Staff.

with headquarters at 501 Fifth Ave., N. Y. Miller joined the Wood Company in 1943 and handled the expediting of war work.

William E. Davies, USNR, has returned after three years in the Navy to the International Printing Ink Division of Interchemical Corp. where he assumed duties as manager of IPI's New York Branch. Recently he was assigned to the aircraft carrier U.S.S. Gilbert Islands where he served for eight months in Pacific waters. Commander Davies brings back with him the Bronze Star decoration. He is a graduate of the United States Naval Academy.

C. A. Richards, director of the Export Division of Interchemical Corporation, has been elected president of the Philippine-American Chamber of Commerce. The chamber, originally incorporated in 1920 to foster and promote trade and mutual understanding between the two countries, has been active since the liberation of the islands to reestablish and encourage commercial relations.

Visitors from Sweden—Early in January, *Printing Equipment Engineer* was honored by a visit from two prominent executives of a printing equipment and supplier house in Sweden. During their visit to this office the accompanying flash was taken. Left to right, the gentlemen in the picture are: Louis E. Pleninger, Manager, ATF Export Division; Stig Cronström, Managing Director Assistant, of A. B. Fredr. Wagner, Stockholm, Sweden; Don Will, Publisher, *Printing Equipment Engineer;* Sven Frögelius, Manager, A. B. Fredr. Wagner, Götenburg, Sweden; Louis R. Beck, Export Manager, Harris-Seybold-Potter Co., Cleveland. Mr. Frögelius returned to Sweden by Clipper ship early in January. Mr. Cronström expects to remain in the United States until March 1.

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Has Everything

Not solely in untried Blueprint Form — Not merely in experimental installations of limited scope — but

THOROUGHLY DEMONSTRATED

during hard war usage in 4 complete installations totalling 42 Printing Units and 9 Sets of Folders.

PROVED FURTHER

through recent purchases by these same publishers of 46 more Printing Units and 10 more Sets of Folders.

No other Newspaper Press has this proven experience or record to assure purchasers of really advanced and satisfactory Post-war performance.

Scott has the most modern Engineering, Design, Materials and Methods of Manufacture.

Scott Presses are compact, occupying least space, but thoroughly accessible and convenient in operation.

Scott Presses are the most rigid, powerful, efficient and reliable.

Scott Presses have Complete Color Versatility (not new to Scott) so that any Scott Press is either equipped, or is readily convertible, for good newspaper color printing.

For complete information address

WALTER SCOTT & CO., INC.

PLAINFIELD, N. J.

District Managers of Harris-Seybold-Potter reviewed developments since VJ-Day and discussed major sales programs and policies at the recent Harris-Seybold-Potter Sales Management meeting in Cleveland. Among those present were (left to right): J. W. Valiant, Vice President and Eastern District Manager; H. A. Porter, Vice President in Charge of Sales; Hedley Prout, Vice President and Manager of the Canadian subsidiary; A. T. Walker, Central District Manager; and M. L. Mann, Southern District Manager. W. G. Martin, Vice President and Western District Manager, was unable to attend because of illness.

HSP Executives Hold Enthusiastic Meeting

EXPECTING an annual sales volume more than double any volume of previous years, executives and sales management personnel of the Harris-Seybold-Potter Co. recently held a three-day conference in Cleveland to strengthen and further coordinate the company's short and long range programs. More than thirty district managers and department heads from the United States and Canada heard G. S. Dively, Vice President and General Manager, and H. A. Porter, Vice President in Charge of Sales, explain company objectives for the period ahead.

"An expanded volume of business will be accomplished." Dively said, "through extensive product development, greatly increased production, addition of permanent capital, continued promotion of offset-lithography, and streamlining of the administrative organization."

Porter, acting chairman at the conferences, outlines sales policies designed to handle the greatest demand for Harris-Seybold equipment in the long history of the company. "The continuing expansion of the graphic arts industry and rapid growth of lithography are expected to enable Harris-Seybold to maintain permanently an expanded volume of sales," Porter told the group.

Among the Harris-Seybold officials present at the meeting were: A. S. Harris, President; J. W. Valiant, Vice President and Eastern District Manager; J. C. Dabney, Assistant Manager of Sales; Hedley Prout, Vice President and Manager of the Canadian subsidiary; A. T. Walker, Central District Manager; M L. Mann, Southern District Manager; R. R. Perry, Western District Assistant Manager; G. D. Baber, Western District Assistant Manager; R. J. Niederhauser, Advertising Manager; R. P. Tyler, Service Manager; and L. R. Beck, Supervisor of Export Sales.

Conference Dates

ANPA Mechanical Conference—William Penn Hotel, Pittsburgh, August 5, 6 and 7, 1946. Worth Coutney, Chairman; Walter E. Wines, Manager, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

International Association of Printing House Craftsmen—Mount Royal Hotel, Montreal, Canada, Sept. 9, 10, 11. H. Guy Bradley, President, 5480 N. Illinois St., Indianapolis 8, Ind.; Herbert Threlfall, Secretary, 55 Pine St., Providence 3, R. I.

SNPA (Eastern Div.) Mechanical Conference—Conference dates to be announced later. C. Frank Mann, Chairman of the Mechanical Committee, c/o *Courier-Journal* and *Times*, Louisville, Ky.; Walter C. Johnson, Manager SNPA, P. O. Box 1569, Chattanooga 1, Tenn.

New England Mechanical Conference—1946 conference dates to be announced later. George L. Green, President, Providence (R.I.) *Journal;* Walter C. Crighton, Secretary-Treasurer, New London (Conn.) *Day*.

PNPA Newspaper Mechanical Conference—Fort Stanwix Hotel, Johnstown, Pa., Monday and Tuesday, April 1 and 2. L. W. Barnes, Bus. Mgr., Johnstown (Pa.) *Tribune* and *Democrat*, Chairman of the Mechanical Committee. Wm. N. Hardy, Mgr., Pennsylvania Newspaper Publishers' Assoc., 209 Telegraph Bldg., Harrisburg, Pa.

Illinois Newspaper Mechanical Conference—Waukegan, Ill., during the fall. Dates to be announced later. President, Clarence R. Snethen, Superintendent, Waukegan (Ill.) *News-Sun;* Secretary-Treasurer, Howard Colton, Pressroom Foreman, Bloomington (Ill.) *Pantagraph*.

LNA Convention—Marlborough-Blenheim Hotel, Atlantic City, N. J., during week of May 12 to 18, exact dates to be announced later. W. Floyd Maxwell, Secretary, 420 Lexington Ave., New York 17, N. Y.

Great Lakes Mechanical Conference—Hotel Claypool, Indianapolis, Ind., October 27, 28 and 29. George Fuller, President, Stereotype Supt., Cleveland *Press;* Al Oberg, Secretary, Comp. Room Supt., Flint (Mich.) *Journal*.

What is "Life Expectancy" of a Monotype Machine?

The Winona (Minn.) *Republican-Herald* of December 31, 1945, carried a story about a Monotype Type-Casting Machine, still in active service, which had been installed in the printing plant of Jones & Kroeger Co. in January of 1902. With the story was printed a picture of the Monotype and its veteran operator, Otto Frisch. Mr. Frisch was sent to the Monotype school in Philadelphia to learn to operate the machine when it was purchased, and has been employed in the Monotype department of Jones and Kroeger ever since. He first entered the employ of the firm in October, 1900.

PIA Surveys Manpower

The membership of Printing Industry of America, Inc., is seeking to employ 20,250 new workers. In 1947, it is estimated that the association's members will need an additional 6,600 employees and in 1948, 5,250 or a grand total of 32,100 employees. This information was supplied by the 2,200 members in response to a recent questionnaire.

According to a report to the membership by James F. Newcomb, President, the survey figures are conservative. Projection of these returns to cover the entire industry and allied trades indicate an overall national industry shortage of not less than 75,000 printing workers.

A breakdown of the survey shows a shortage of mechanical workers of 4,260 in the composing room, 5,260 in the pressroom, 4,680 in the bindery, and 1,110 in offset and lithographic departments.

Haessly Heads Diamond

Tom Haessly, formerly with Turner Type Founders Co. of Cleveland, is now president of the Diamond Printing Machinery Co. in Pittsburgh. Established ten years ago as a Linotype repair house, the firm specializes in the sale of used and rebuilt equipment and the repair of machinery. The business at present consists mainly of liquidating plants.

Facts on "type metal in use" have been gathered at Imperial headquarters ever since Imperial announced the Plus Plan in 1924. These records showing what has happened to the type metal of other plants are the basis of Imperial's recommendations for your metal.

When you use Imperial Type Metal and the Plus Plan, you use all that experience—all those facts. Can you afford to do without this combination? Others say they can't.

Let us send you full details about Imperial and the Plus Plan.

IMPERIAL TYPE METAL CO.

Serving the Graphic Arts Industry Only

Philadelphia 34 New York 7 Chicago 50

Imperial

Booth's Zink Cut Cement prices in the United States: 75c per tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

One Trial Tube . . . 75¢

If you are not enjoying the benefits of **Booth's Zink Cut Cement,** we suggest that you order a trial tube. This is one of the greatest worry eliminators to be found in the composing room or stereotype department. Fastens all kinds of cuts to wood or metal base.

One Pair . . . $1.45

That's what it will cost you to try out a pair of **Booth's Black Rubber Rolls** for line-composing machine keyboard shafts. When applied properly, these rolls are the same diameter throughout their length. Resilient properties are excellent for life of the roll. $1.45 per pair; $7.75 per dozen.

E. A. BOOTH

RUBBER COMPANY

MAHONING BANK BLDG., YOUNGSTOWN, OHIO

Patents

For The Graphic Arts Field

The patents reported here are those issued on December 18, December 25, January 1, January 8, January 15.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issuing each week, Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here, specify the patent numbers and send 10c for each separate patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,391,673. ENVELOPE BLANK especially for easy binding into magazines and catalogs, the design of which eliminates waste in paper. The paper blank is a succession of three similar panels oined along horizontal fold lines. Upper panel has a gummed strip along its top free edge. Upper and lower panels each have a binding strip at one side edge which is separated from the panel by an easy-tear line. The intermediate panel has one edge in line with the tear lines and at its opposite edge has a cross flap of the same dimension as the binding strips of the other panels. In forming an envelope, the lower panel is folded over the intermediate panel and marginally glued to it, and the cross flap of the intermediate flap is glued to the opposite marginal edge of lower panel. By this construction the envelope blank may be bound into the publication by the same fastening means employed for securing the leaves of the publication together, and yet is easily detachable along the tear lines. Invented by Albert M. Broudy, Fittsburgh, Pa. Unassigned. Application March 21, 1944. 2 claims.

Composing Room Equipment:

2,391,021. APPARATUS FOR PHOTOGRAPHICALLY PRODUCING TYPE MATTER for eventual printing by offset, intaglio, and gravure processes. Elements or matrices are used which carry a photographable character in a plane parallel to a frame or broad side of the matrix body. The thickness of the matrix body is made equal to or proportional to the setwise width of the character it bears and the matrices disclosed are similar in outline to those used in commercial line casting machines. The magazine for storing fonts of the matrices, the devices for releasing the matrices from the magazine and for composing them into lines, and the devices for directing them back into the magazine are much the same as those used in typographical line casting machines of the class shown in old U. S. patent No. 436,532, dated September 16, 1890. After a line is composed, it is transferred to a justifying mechanism which expands spacebands inserted between the words in the line to complete the composed line to a predetermined length. Thereafter the elements of the justified line are moved one after the other into a photographing position where the character of each is photographed as the elements are successively presented at the photographing position. After elements of composed line are photographed they are automatically discharged from photographing mechanism and redistributed to the magazine from which they were taken. Invented by Einar G. Klingberg, Long Island City, Fritz Stadelmann, Valley Stream, and Herman R. Freund, Brooklyn, N. Y. Assigned to Intertype Corporation, Brooklyn, N. Y. Application July 21, 1942. 73 claims.

2,391,259. KNIFE WIPER which will bear uniformly with light pressures on the edges of both knife blades of the side knives of a linotype machine, regardless of inequalities in the setting of the blades, the wiper, or the wiper bar. A back plate has vertically-arranged screw openings in one end to permit attachment to the vertically reciprocating knife wiper bar of the type-casting machine, so that the plate will extend horizontally from one side of the bar across the front of the knife edges. The wiper blade is caused to "float" by being resiliently supported from the back plate between the plate and the knife edges. Invented by Herman W. Michalke, Denver, Colo. Unassigned. Application September 23, 1944. 5 claims.

2,392,558. AUTOMATIC LINE CENTERING AND SHIFTING DEVICE FOR TYPESETTING MACHINES which may be mounted without modification on all linotype and similar typesetting machines, and thereby is unlike existing line centering and shifting devices that are adapted for use only with the machines for which they have been designed. It is capable of shifting the lines of molten lead alloys to the right or left and of centering the text with the greatest accuracy. The spacing between the two jaws between which the line is cast is controlled by a rack acting on each jaw, movable by a set of pinions driven in the required direction by another rack. The latter is pivoted to a connecting rod attached to a lever which rocks under the action of a cam keyed to the camshaft of the type-setting machine. Only one of the two racks which control the jaws may be engaged at a time. The change of operation between centering and shifting to the right or left is performed easily, without any shock, through actuation of a handwheel that is automatically held in either of three operative positions. Invented by Fernand Charles Souche, Oullins, France. Vested in the Alien Property Custodian. Application October 15, 1942. 7 claims.

Feeding, Folding and Delivery:

2,391,125. CONVEYING AND SUPPORTING DEVICE FOR A STACK OF SHEETS adapted to hold them in such a manner as to permit the successive removal of such sheets from the top of a stack without tearing. A pair of standards fixedly carried by a table top are relatively positioned to releasably engage undercut edge notches formed in the pliable sheet material forming the stack. A stack plate is adjustably carried by the table top. A detent pivotally mounted on each of the standards, outside the plane of the notched side wall of the stack of sheets, extends beyond the standards and over the stack to limit its upward movement. Detent moves horizontally from over the stack of sheets to permit their threading down onto the standards. A spring means constantly urges the stack plate upwardly to force the upper sheet of the stack of sheets against the detents. Invented by Charles H. Carpenter, Kansas City, Mo. Unassigned. Application May 25, 1942. 1 claim.

2,391,170. STACKER ACCUMULATOR for handling folded sheets of paper or carton blanks having glue applied to certain areas. A wide endless conveyor belt is mounted upon a main frame of the accumulator. A supplemental frame upon the main frame is longitudinally adjustable and provided with a compressor, preferably in the form of a wide belt complementary to the conveyor. One or more endless compressors may be used to cooperate with the conveyor belt to engage lapped sheets. Pressure rollers equally apply any desired force, or no force at all, to the compressor belt or belts. Invention also includes a pick-off table, preferably in the form of an endless belt, to which the lapped sheets are delivered from conveyer. Pick-off table is narrower than conveyer and may be adjusted laterally or vertically for the con-

Finish Line—

JUST YOU WATCH ME FLASH MY ETCHING SPEED.
YEAH! YOURE OKAY, BUT I'M BETTER FOR A LONG RUN.
WHEN IT COMES TO SMOOTH PERFORMANCE, I CAN SATISFY THE ENGRAVING CROWD.
BUT WHEN THE GOING GETS TOUGH, THEY USUALLY CALL FOR ME.
I GUESS YOU'RE RIGHT, ENGRAVERS NEED US BOTH TO ASSURE WINNING FINISHES.
...ESPECIALLY SINCE OUR MACHINE-CUT FINISH IS ALREADY A RECOGNIZED WINNER.
ZOMO-ZINC
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Perfect
IMMERSION MELTING at Lower Costs!

are obtained by using

KEMP
IMMERSION MELTING UNITS

SPEED AND ECONOMY

Immersion heating elements minimize loss of heat thus greatly reducing maintenance costs and speeding operations.

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KEMP IMMERSION HEATED MELTING UNITS

Possess these exclusive features:

- Greatly reduced fuel consumption
- Minimum dross formation
- Utmost safety provisions
- Speedy production for the highest quality plates.

For complete information request Bulletins 1-179 & 1-200.1

The C. M. KEMP MFG. CO.

405 E. Oliver St. • Baltimore 2, Md.

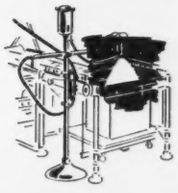
KEMP of BALTIMORE

Stop TURNING OUT MESSY PRINTING JOBS!

USE

W-R SPRAYER GUN WAX

- Can be used on all colors successively. No sandpaper effect.
- Harmless to press and operators. Safe to use on food labels and wrappers.
- Makes a fine, light spray or mist that is almost invisible.
- Absolutely colorless. Will not affect the most delicate tints or colors.



W-R PROCESS COLOR WAX

- Mixes with any lithograph, offset or letter-press inks—colors or black.
- Assures perfect lifting and blending of colors. Simplifies printing of solids.
- Prevents offsetting, mottling, picking and sticking. Keeps inks from crystalizing.
- Indispensable for transparent colors and process work.

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venience of the operator removing sheets from table. Invented by Harold S. Labombarde, Nashua, N. H. Assigned to The International Paper Box Machine Company, Nashua, N. H. Application August 20, 1942. 27 claims.

2,391,265. PAPER ROLL SUPPORTING RACK by means of which paper is withdrawn from one or more rotatably supported rolls for advancement to associated cutting, printing, or coating machines. The rack subjects the rolls to a uniform degree of tension so that the initial cutting operation will produce paper sheets of precisely the same dimension. A back rack supports one or more paper rolls, each roll being held by a longitudinally aligned pair of stud shafts or arbors having end engagement, only, with the roll. The rolls are uniformly tensioned by coil springs which displace the frictional brake devices of the prior art. The back rack is readily adapted to accommodate paper rolls of any commercial length by the provision of an adjustable frame member. Invented by Edward Palmer, Columbus, Ohio. Assigned to Ohio Wax Paper Co., Columbus, Ohio. Application January 25, 1944. 4 claims.

2,391,892. FEEDER CONTROL MECHANISM which prevents torn, damaged, or out-of-alignment sheets from entering a lithograph varnishing machine. For receiving the sheets being fed to the machine, there is provided a revolving cylinder which has numerous uniformly timed oscillating grippers that grip the sheets to move them into the machine. When the travelling sheets get out of alignment, the automatic timing of the grippers is delayed and they miss the sheets, preventing their being fed. The control is associated with a stop that is operated by allowing a beam of light to pass to an electric eye when a break occurs in the paper travel. Thus the travel of the sheets is automatically and simultaneously stopped when the grippers fail to operate. Invented by Stephen Garassino, San Francisco, Calif. Unassigned. Application February 15, 1943. 3 claims.

2,392,392. SHEET GRIPPER for gripping sheets of paper at their forward edges and conveying them to final delivery. This is designed particularly for use on an endless conveyor, comprised of endless chains running over sprockets and having a plurality of transverse bars mounted with their ends in the chains. The grippers are mounted on the transverse bars to grip the paper which is then carried along on the conveyor. Each gripper consists of a gripping finger, a lug, a spring and casing pivoted to a dog, and a shaft. This construction eliminates the necessity for separate spring means to urge the shaft to sheet gripping position. Invented by Christen R. Kaddeland, Shelton, Conn. Assigned to Harris-Seybold-Potter Co., Cleveland, Ohio. Application March 12, 1942. 12 claims.

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Miscellaneous:

2,391,619. PROCESS FOR IMPROVING COATINGS ON PAPER. Printed labels, glassine paper, and other fibrous base materials coated with films of vinyl resin are, by this process, given an improved gloss and brilliance and increased resistance to abrasion, moisture, oils, fats, alkalies and acids. The process consists of subjecting the resin coated sheets to a flash baking operation at a high temperature for a very short time. Temperatures ordinarily used are in the neighborhood of 375° to 400°F. The time of exposure of the coating to these temperatures is usually about 5 to 20 seconds. Brittleness of the paper is prevented by carrying out the baking operation in a humidified atmosphere or by rehumidifying the coated paper after baking. Invented by Arthur K. Doolittle, South Charleston, W. Va. Assigned to Carbide and Carbon Chemicals Corporation. Application August 1, 1940. 6 claims.

2,391,705. METHOD OF PRINTING TO ACHIEVE LUMINESCENCE. A dial, map, book, chart, direction card, or the like, is printed in such a way that it can be seen in either daylight or under ultra-violet light. Type is set and, using ordinary letterpress equipment, the characters are printed on a dull black paper, first with a clear printing varnish and then with a base coat, made of linseed oil, "arabitol," a drier, and zinc stearate as pigment. Both the varnish and the base coat are applied with the same printing equipment. Onto this tacky surface there is dusted a luminescent material which has its individual particles coated with a chemical compound comprising a partial ester of a relatively high molecular weight monocarboxylic acid and a polyhydric alcohol. Invented by Sampson Isenberg, Chicago, Ill. Assigned to General Luminescent Corporation, Chicago, Ill. Application August 10, 1942. 12 claims.

2,392,594. COMPOSITE DECORATIVE MATERIAL such as shelf-edging, shelf paper and other decorative articles is formed from two superimposed plies, one ply to protect the printing on the other. One ply of the shelf-edging is printed with a design and a transparent ply is superimposed, with the printing in between the two plies of material. The printed design of the first layer is pressed into the contacting face of the second, which second ply is embossed in registration with the printing so that the embossing registers and interfits with the indentations thus made. For protecting the paper against wear, transparent plastic materials, such as synthetic resins or regenerated cellulose may be used. Either side may be the exposed face or wearing side of the decorative material in the finished article, but that ply which forms the face should be of transparent composition. Invented by Edward Karfiol, Great Neck, and William A. Roehm, Rockville Centre, N. Y. Assigned to Royal Lace Paper Works, Brooklyn, N. Y. Application November 4, 1944. 5 claims.

Plate Making:

2,391,025. PHOTOENGRAVING METHOD in which a half-tone printing plate negative has screen pattern discharged in the highlights but preserved in the shaded portions. This is accomplished by including in the work areas of the subject a color changing compound. The light sensitive element is subjected to two registering exposures. One of the exposures is made with a screen and with the compound in one condition to register the gradations corresponding to shade portions of subject. The other exposure is made with screen effectually removed and with compound in another and colored condition while preventing light of such colored compound from acting on the light sensitive element. Invented by Walter S. Marx, Jr., Santa Barbara, Calif. Assigned to Printing Arts Research Laboratories, Inc., Santa Barbara, Calif. Application September 11, 1943. 18 claims.

2,391,171. PHOTOGRAPHIC STRIPPING FILM. Invention provides for applying a wax layer (e.g., carnauba wax) to a sized paper support, such as raw photographic paper stock, and calendering the wax layer to a smooth surface. To this temporary support, a thin layer of a film forming material, such as cellulose ester is applied. This permanent support is coated with a suitable gelatin sub and on the subbed surface, a light sensitive photographic emulsion is coated. This film carrying the emulsion may be stripped from the waxed paper support after the emulsion has dried or it may be stripped at a later time and cemented temporarily or permanently to any flat surface, such as glass, metal, or wood. The emulsion may be exposed before or after the permanent support is stripped from the wax layer. The process may be used in the photomechanical arts as a mask layer when applying to multi-layer colored film and it may also be used in the automotive and aircraft industries for the preparation of templates. Invented by Gerould T. Lane, Rochester, N. Y. Assigned to Eastman Kodak Company, Rochester, N. Y. Application June 7, 1941. 4 claims.

(*Continued on Page 46*)

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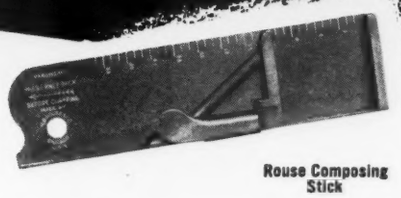

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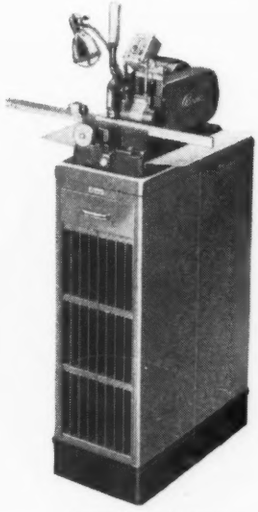

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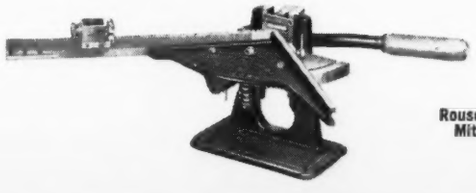

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2,392,502. APPARATUS FOR MAKING PHOTOGRAPHIC PRINTS on variable contrast light-sensitive material. A two-colored filter and a shutter are relatively adjustable to prevent passage of light except through the colored areas. The filter has a series of areas in the form of parallel bands of one color distributed uniformly over the filter and spaced from one another by a series of intervening alternate parallel band areas of the same size and shape but of another color. The shutter has two series of alternate transparent and opaque areas corresponding respectively in size and shape to the two series of colored areas of the filter. By adjusting the shutter, light is provided in any desired proportion, varying from all of one color to all of the other. Invented by Rowland S. Potter, Brightford Heights, N. Y. Assigned, by mesne assignments, to E. I. du Pont de Nemours & Company, Wilmington, Del. Application June 8, 1944. 1 claim.

2,392,503. TEMPORARY SUPPORT FOR PHOTOGRAPHIC GELATIN LAYERS and method of transferring the latter to permanent supports. The present structure differs from prior stripping films in that the sensitive gelatin layer can be stripped while wet from its temporary paper support and attached to permanent support without the need of collodion, and may be exposed and processed after the transfer. The stripping is facilitated by a retaining layer consisting of a prolamine between the temporary support and the gelatin layer. The retaining layer is insoluble in water and the solutions used in transferring the gelatin layer and acts to retain the gelatin layer on the temporary support until it is to be transferred. Then, upon application of water, the retaining layer releases the gelatin layer for attachment to the permanent support without any part of the retaining layer adhering to the gelatin layer. Invented by Rowland S. Potter, Brightford Heights, and Robert F. Brown, Rochester, N. Y. Assigned, by mesne assignments, to E. I. du Pont de Nemours & Company, Wilmington, Del. Application September 28, 1942. 2 claims.

2,392,521. POROUS RESILIENT PRINTING PLATE with self-inking characteristics obviously particularly adapted for cash register tape printing or numbering but considered to be of general interest. The printing plate is made of a porous rubber or rubber-like material that is laminated. The main body is coarsely microporous and the printing surface is finely microporous. The coarse layer is supplied with ink by means of a wick-like backing of porous metal, or woven fabric, or felted fibre, or any other capillarily conducting substance. The small pores act to control the flow of ink to the type face, or printing surface, which is a vulcanized resilient microporous butadiene copolymer rubber, as is the stronger backing layer. Invented by Robert G. Chollar, Dayton, Ohio. Assigned to The National Cash Register Company, Dayton, Ohio. Original application February 12, 1942; divided and this application April 1, 1943. 9 claims.

Printing Inks and Related Chemicals:

2,391,067. PRODUCTION OF SOFT CARBON BLACK desirable for use in manufacture of printing inks and in the compounding of rubber. Method consists in directing streams of oxygen containing gaseous combustible substance adjacent inner sides of the boundary walls of a combustion chamber. Combustible mixture is ignited to form primary heating zones. Flow of burning streams is diverted and directed along outer sides of combustion chamber boundary walls to form secondary heat zones and velocity of flow is controlled. Stream of hydrocarbon gas is directed into combustion chamber between and in contact with the burning streams thus decomposing the gas and forming carbon black. Invented by Percival H. Mitchell, Toronto, Ontario, Canada. Assigned to Albert Carson Ransom, Toronto, Ontario, Canada. Application January 8, 1942. 12 claims.

2,391,620. MOISTUREPROOFING OF PAPER is accomplished by forming on its surface a non-homogeneous deposit of a resinous vinyl polymer formed from vinyl chloride and a wax incompatible therewith, the vinyl polymer being applied from solution in an organic solvent which is a non-solvent for the wax. The amount of wax is very small—between 2 and 10% by weight of the vinyl polymer. The coated paper is baked at 375° to 400°F. for not more than 120 seconds, to form a clear and non-tacky composite film of wax and vinyl polymer on the paper which presumably may be printed beforehand as stated in the following patent. Invented by Richard W. Quarles, Pittsburgh, Pa., and Arthur K. Doolittle, South Charleston, W. Va. Assigned to Carbide and Carbon Chemicals Corporation, New York, N. Y. Application June 20, 1941. 8 claims.

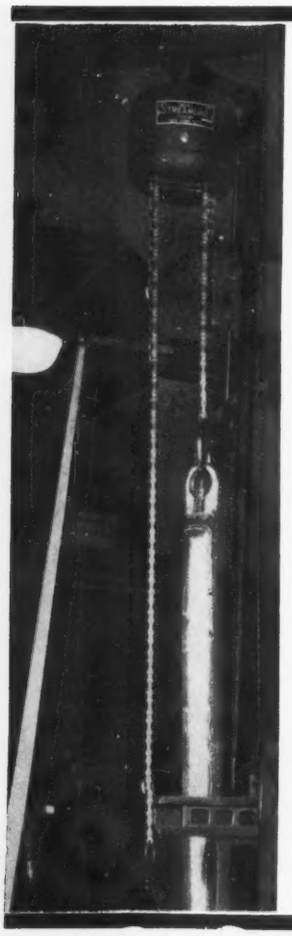
2,391,621. COATING OF PAPER by which process both printed and unprinted papers may be made abrasion-, grease-, and moisture-resistant by forming a thin film of the coating of this invention on the paper and then baking it at a temperature of from 225° to 275° F. The coated paper may be used as a food wrapper, bottle cap liner, wrapper for metal parts to prevent rusting in storage, and for laminated paper products. Coating is prepared by dispersing a copolymer of vinyl chloride 86%, vinyl acetate 13%, and maleic acid 1%; a copolymer of vinyl chloride 87% and vinyl acetate 13%; and a paraffin wax in a mixture of methyl ethyl ketone, methyl isobutyl ketone, and hydrogenated petroleum naphtha. Mixture is heated over the melting point of wax and agitated. Invented by George M. Powell, III, South Charleston, and William H. McKnight, Charleston, W. Va. Assigned to Carbide and Carbon Chemicals Corporation, New York, N. Y. Application September 17, 1943. 1 claim.

2,391,836. COLOR COMPOSITIONS CONTAINING SALTS OF MONOQUINONYL-ACID-AMIDES that may be applied to textiles, paper, or other fabric materials for decorative or protective purposes. In preparing the salts to be used as printing assistants, a monoquinonyl amide of a dibasic acid is usually reacted with ammonia or an amine. Particularly good printing assistants are obtained from primary alkyl amines such as monoethyl amine, monopropyl amine, etc. Compounds may be readily powdered and blended in dye powders. Printing pastes made by this process have the particular advantage that the dyes remain in a highly dispersed state as individual particles rather than as dispersions of particle aggregates. Invented by Roy Herman Kienle and Chester Albert Amick, Bound Brook, N. J. Assigned to American Cyanamid Company, New York, N. Y. Application July 1, 1943. 10 claims.

2,392,073. IRON BLUE PIGMENT of high alkali resistance and therefore especially suitable for use in printing inks for soap wrappers, soap boxes, etc. To a ferrous salt solution there is added a small quantity of a soluble salt of a metal selected from the group consisting of nickel and cobalt, and an excess of an alkali ferrocyanide solution, in that order, to form a white paste precipitate of ferrous alkali ferrocyanide. Sulfuric acidi is added, mixture is boiled and white paste is oxidized to form a ferric ferrocyanide type pigment modified with a metal selected from the group consisting of nickel and cobalt. Invented by Andries Voet, East Orange, N. J. Assigned to General Printing Ink Corporation, New York, N. Y. Application August 11, 1941. 10 claims.

2,392,135. COATING COMPOSITION that may be applied to paper as well as to fabric, wood, glass, sheet steel or iron. Composition consists of a suspension of a non-cohering powder of copolymer of vinyl acetate and vinyl chloride of a particle size to pass a screen of about 200 mesh, in a medium comprising water containing in solution enough of a water-soluble organic plasticizer for the plastic to plasticize the latter when the water evaporates. Dispersion during the process may be facilitated by the addition of a small amount of sodium oleate, Turkey red oil, etc. In a further application of the invention the compositions may be admixed with 5% to 50%, based on the resin content, of a pigmentary body such as carbon black, aluminum powder, etc., made up to desired consistency and used as a printing ink. Invented by Henry O. Farr, Jr., Pittsburgh, Pa. Assigned to Pittsburgh Plate Glass Company, Allegheny County, Pa. Application September 7, 1940. 3 claims.

(*Continued on Page 48*)



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2,392,180 and 2,392,181. AZO DYESTUFFS AND PIGMENTS that are produced from glycol derivatives. The products may be made from derivatives of any of the glycols having not less than two and not more than four carbon atoms, e.g., ethylene, propylene, etc. The shade does not differ greatly with the different glycols. In their diazotized form, these bases may be coupled, with or without substrates to yield dyestuffs and pigments of fast color. In one example two parts of blended diazonium chloride are dissolved in 28 parts of water and the solution is thickened by the addition of 20 parts of a suitable carbohydrate thickener. The printing paste formed thus is printed on cotton goods previously impregnated with anilide of 2 hydroxy-3 naphthoic acid in an alkaline bath. The print is dried and cleaned in a 2% soda ash solution at 70° C., is soaped at 65° C. in a 1½% solution, mixed and dried. Invented by Robert P. Parker, Somerville, and John J. Denton (first patent) and Corris Mabelle Hofmann (second patent), both of Bound Brook, N. J. Assigned to American Cyanamid Company, New York, N. Y. Both applications July 3, 1944. 6 claims each.

2,392,376. BLACK PRINTING INKS containing carbon black and characterized by lack of bloom and halo. The high-strength inks of this invention are prepared by incorporating therein certain toners which are made by reacting one or more dye bases with a fatty acid, or mixture of acids, selected from the group consisting of lauric, myristic and palmitic acids. Example: carbon black, 10 to 14%; rosin oil, 1 to 5%; myristic acid toner, 1.5 to 4%; and mineral oil, the remainder. Invented by Werner F. Goepfert, Oradell, N. J. Assigned to Interchemical Corporation, New York, N. Y. Application May 15, 1942. 5 claims.

2,392,657 and 2,392,658. TONERS FOR CARBON INKS which equal or exceed the oleic acid treated dye bases in coloring strength, do not creep, and do not cause a bloom that can be rubbed off. The toners also show marked wetting properties of the carbon black when milled in waxes to make transfer inks. In one of the carbon inks the oil-soluble toner is an induline base combined with at least one fatty acid of the group of lauric, myristic and palmitic acids. An oil-soluble deep blue semi-solid ink is the reaction product of approximately nine parts by weight of lauric acid and six parts by weight of induline base. It has a high dispersive action on carbon black in waxy and oily media. Examples are similar in companion patent 2,392,658 which relates to carbon inks and toners for them made by combining methyl violet base with myristic acid or a mixture of myristic and palmitic acids resulting in a bronze-purple color. Invented by Werner F. Goepfert, Oradell, N. J. Assigned to Interchemical Corporation, New York, N. Y. Both applications May 15, 1942. 6 and 4 claims, respectively.

2,392,663. AMINOANTHRAQUINONE DERIVATIVES useful in printing and dyeing the most diverse materials, or useful as intermediate products in the manufacture of dyes. Amino compounds of the anthraquinone series containing at least 2 primary amino groups, at least one of which is directly attached to an anthraquinone nucleus, are reacted with dicarboxylic anhydrides. The anhydrides are used in such proportions that at least one amino group is acylated and at least one amino group remains unchanged. Blue, green and blue-green colorings are produced. Invented by Paul Grossmann, Binningen, Switzerland. Assigned to Society of Chemical Industry in Basle, Basel, Switzerland. Application August 24, 1942. 8 claims.

Printing Presses and Equipment:

2,389,730. DAMPENING MECHANISM FOR PRINTING PRESSES which comprises a number of nozzles for discharging liquid in the form of streams and spray-converting means to convert the streams into spray that is directed against the printing plate on the press cylinder. During each revolution of the cylinder, a shut-off entirely shuts off the delivery of spray against the printing plate. A second shut-off gate partially intercepts the spray stream. Invented by George A. Iler, Riverside, Ill. Assigned to Roberts & Porter, Inc., Chicago, Ill. Application June 3, 1942. 15 claims.

2,390,618. PRINTING AND EMBOSSING APPARATUS that may be used in making a wide variety of articles of manufacture. It is intended primarily for use in the manufacture of shelf papers, shelf edgings, decorative wrappers, labels for cans, boxes, etc. A subject is photographically reproduced onto at least one intaglio printing roll. Predetermined portions of the web which it is desired to emboss are photoengraved. Resulting rolls are coacted in succession directly with a moving web with the corresponding printing and embossing portions thereof in predetermined correlation. Invented by William A. Roehm, Rockville Centre, N. Y. Assigned to Royal Lace Paper Works, Brooklyn, N. Y. Application April 12, 1944. 7 claims.

2,392,391. MECHANISM FOR CONTROLLING IMPRESSION of printing presses dependent upon the presence or absence of a sheet at a point prior to the printing point. Sheets are conveyed to a printing couple by a set of traveling sheet grippers which receive sheets at a given point in their travel. A sheet detector finger that travels with the grippers assumes at that point one of two positions depending upon whether or not a sheet is taken from the feeding mechanism. Mechanism which functions with respect to the direction of sheet travel is spaced from the first-named point for controlling the impression of printing couple, the operation of such mechanism being dependent upon the position of the finger. Invented by Christen R. Kaddeland, Shelton, Conn. Assigned to Harris-Seybold-Potter Company, Cleveland, Ohio. Application March 11, 1942. 19 claims.

2,392,706. INKING FOUNTAIN for high speed rotary printing presses in which the ink fed from different width-wise or columnar portions of the fountain may be regulated from an ink control mechanism positioned at a distance from the fountain. There are means for automatically increasing or decreasing the ink fed from different portions of the fountain, the change being effected in accordance with the manually selected setting of various control members. It may also be varied in accordance with the appearance of the various columns of the printed sheet. Invented by Auburn Taylor, Charleston, W. Va., and Emory W. Worthington, Chicago, Ill. Assigned to The Goss Printing Press Company, Chicago, Ill. Application May 23, 1942. 16 claims.

2,393,097. INKING AND LACQUERING ROLLERS for lithographic, printing and lacquering machines. A mandrel has a covering of textile material cemented to it. Centrally bored blocks of ground cork are subsequently cemented to the textile material, and the cork is treated so as to have an absolutely cylindrical contour. The textile material imparts additional resiliency to the cork blocks and provides means for insuring that the blocks are securely attached to the mandrel. The rollers thus prepared are said to retain resiliency over a long period and are not adversely affected by inks, lacquers and cleansing compositions. Invented by Frank Fox, Halifax, England and Unassigned. Application February 7, 1942. 1 claim.

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The Royle Router

- A large table mounted on a rigidly constructed column.
- Convenient alignment and tightening of driving belts.
- Running parts designed to reduce vibration.
- Sufficient speed at cutter edge to route fine or rough out without reducing speed.
- Precisely fulcrumed elevating mechanism assures immediate reaction to pressure on the foot pedal.
- Changing cutter heads a matter of seconds.
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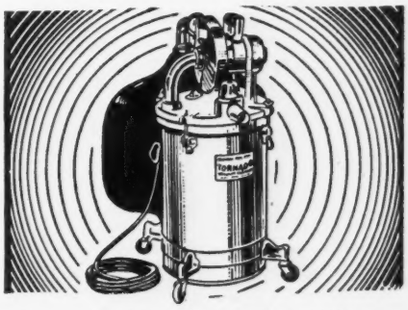

KEEP your plant clean — protect machinery — reduce power costs—salvage scrap — with the TORNADO Portable Industrial Vacuum Cleaner. Powerful. Portable. Picks up dust, dirt, chips, etc. Light weight. Large capacity.

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GUMMED PACKING
CORK BLANKETS
CREEPERS
POURING SHEETS
ROUTER BITS
TAILBOARDS

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AMERICAN PUBLISHERS SUPPLY
P. O. Box 924 Lynn, Mass.

BOOKS

RECEIVED

Maple Press's Annual Keepsake Edition

THE fourth annual Christmas brochure to be published by The Maple Press Co., York, Pa., is entitled *Business and the Radical Indictment*, by David McCord Wright. The book is printed letterpress. As usual, the book was designed by Howard N. King, vice president of Maple Press and typographic counselor to Intertype Corporation. Dimensions of the book are 6½ in. by 10 in. Cover is in hard board with cloth spine.

Paper used is white English finish. The text was set entirely by hand in 14 pt. Bembo. The unusual initials and decorative bands were designed by Valenti Angelo. All of the initials and decorative spots have been printed in a medium blue and terra cotta color and the text is entirely in black ink for easy reading.

A striking feature of the book is the title page which is presented in a two-page spread, as shown in miniature in the accompanying illustration. The title page also is printed in medium blue, terra cotta with black type.

The design of the book is beautiful in its simplicity. It is easy to read and should be a choice item for the libraries of those fortunate enough to receive a copy.

Two-page title page for the book ***Business and the Radical Indictment,*** was printed in Chinese blue and terra cotta ornamentation with type in black ink. Produced by the Maple Press.

Purchases Chicago Building

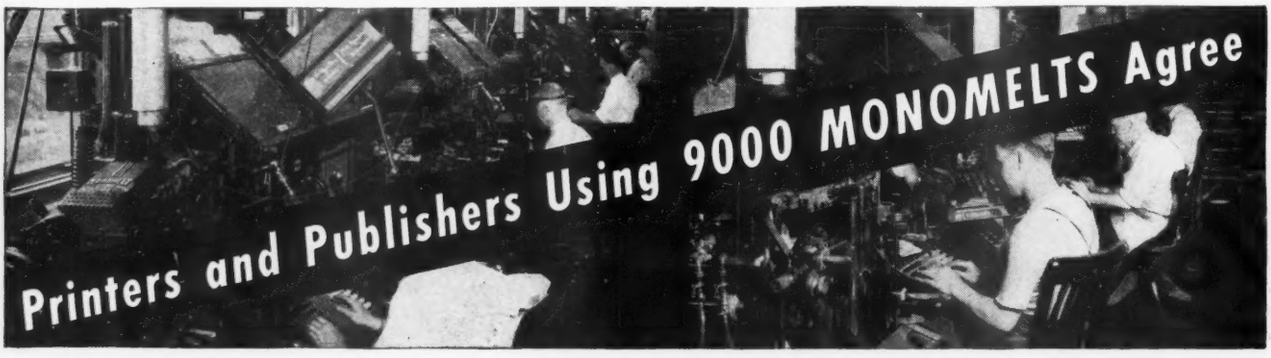
Wm. A. Force & Co., manufacturer of numbering machines, has purchased and has occupied the building at 3000 W. Chicago Avenue, Chicago 22, Ill. This building will provide the Force Company with office, show room, warehouse, and parking space for printers, according to W. A. Force, 3rd, the company's president.

Constructive Action

(Continued from Page 30)

ing or pattern plate."

Peter Schottannes, president of the Wayne Colorplate Co., Detroit, discussed *What is Necessary to a Good Engraving*. He recommended similar halftone etching depths as Mr. Rowe, the previous speaker. He also stated that photography or art for newspaper reproduction must have contrast Vignette effects, or



"You Can Produce a Better Looking Paper Faster— When Type Metal is MONOMELTED"

Saves Valuable Time . . . Improves Quality

●In your constant race against the clock each minute becomes more valuable as the deadline nears. Then, time lost resetting weak, broken lines puts pressure on everyone.

The place to eliminate these troubles is at the source—by using the MONOMELT System to keep your metal in better balance longer. Then your line-casting machines produce clean, solid slugs that mean *cleaner proofs . . . perfect mats . . . better presswork.*

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Fits tightly in the end of standard dross drum. Vanes in top spread dross evenly over screen . . . a few turns of the handle sifts dross and no metal gets into the drum. Cleaner metal reduces machine troubles, improves quality of slugs. Now available. Mail your order today.

Price . . . . $25.00 F.O.B. Minneapolis

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"SPEED means doing things just once"

explains the stereo foreman. "Mighty little tearing around is needed, young fellow, if you make every step sure. It's the re-molds and the second casts that eat up time and put a crew behind the eight ball. That is one reason we stick to Certified Mats. Their first cast is perfectly good and goes on the press. Dependable performance always saves time."

For dependable stereotyping, rely on Certified Mats

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Certified DRY MATS

Now, more than ever, Mohr saw owners appreciate the important savings in time, made possible by this automatic slug saw. Slugs are cut to any desired length as they are ejected from the linecasting machine. 100% automatic operation. Accurate and speedy.

Write for information about the Mohr Measure Control Unit—the quick-changing feature which makes possible instant and precise adjustment of slug length.

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Leading Stereotypers Choose "COME-BACK" and "STAY-BACK"

STEREOTYPERS who have the "Know-How" use Eastern Tru-Mold Cork Molding Blankets because of their superior "come-back" qualities. These same properties make for sharp, clean impressions even after severe usage. They have greater flexibility that keeps edge cracking to a minimum. Made with just the right amount of Bakelite to insure perfect density. Only tru-Molds have these properties.

Tru-Molds can be had in either "Medium," "Medium-Hard" or "Hard" density in the following sizes.

Sizes	1/4" Each	5/16" Each	3/8" Each	3/16" Each
20" x 24"	$2.50	$3.75	$4.50	.....
21" x 25"	2.75	4.00	4.75	$2.50
22" x 26"	3.00	4.25	5.00	.....

(One size only on 3/16"—21" x 25")

Send in your order now

LEADING stereotypers use "Flecto" Gummed Backing Felt to secure maximum "stay-back" resulting in clean-cut plates. "Flecto" sticks flat to the mat regardless of heat used in scorching. It is free from cracking, slipping or crystallizing. Order it in sheets or strips. Either way it cuts or tears easily, cleanly and without ragged edges. Accurately gauged, uniform throughout, soft, pliable; will not peel or separate in layers; conforms to and shrinks with the mat.

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Gauges .021, .025, .030 (Green) sheeted 18" x 24".

Gauge .035 (Red) sheeted 18" x 24".

Gauges .040, .045 (Green) sheeted 18" x 22".

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Cut into strips 9" or 18" long and 1/8" to 1" wide at no extra charge.

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COMPOSITORS *Praise*
THE C&G NO. 3-A SAW TRIMMER

"It's fast — it's accurate — easy to adjust." So say experienced compositors who like the simple, safe, and speedy action of the precision-built C & G No. 3-A Saw Trimmer. All sawing operations completely safeguarded at all times.

Write for illustrated folder and list of nearby users.

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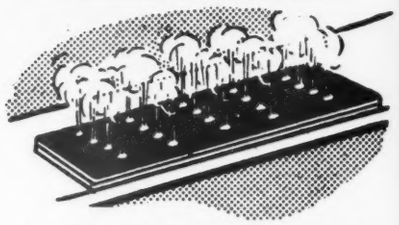
STEREOTYPE PERFORATED GUMMED PACKING FELT

Important where considerable shrinkage is employed



Manufactured under Patent No. 1,967,444

Is More Flexible • Forms with the Mat • Dries Faster • Sets Instantly

Send for a Trial Order Today — Sheets or Cut Strips

American Publishers Supply
P. O. Box 924 Lynn, Mass.

feather edges should not be attempted. This contrast is necessary because average newsprint stock is approx. 10% off pure white, while newspaper ink, as printed, averages approx. 70% black. This leaves the newspaper advertiser with a tonal range of only 60% as compared to the 100% range possible in catalog printing.

Mr. Schottannes's informative address was closed with this parting shot: "For the life of me, I have never been able to understand why, in the name of common sense, the newspaper publishers have not prepared and distributed a set of standards of their own. It would seem that newspaper publishers should know more about their own particular business, about their own limitations, than any person or persons in the advertising agency field or in the supplier group. I will close with the question: "Why don't newspaper publishers have standards of their own?"

Art Preparation

Colin Campbell, assistant account executive with Campbell-Ewald Co., discussed *Art Preparation*. By means of a chart carrying graduated tone values from zero to 100%, he discussed copy for halftone reproduction. Art work in the form of drawings or photographs which are soft in tone values, with delicate graduations of tone, simply will not work, nor will pieces of art consisting of heavy and shadow tone values. For good reproduction a drawing or photograph must have predominance of the light and middletone values. Said he: "And that doesn't mean that you can't use heavy and shadow tone values generously. These latter values reproduce acceptably when their areas are kept to a minimum and are relieved by strong and contrasting light and middletone values or pronounced highlighting."

Continuing, Mr. Campbell said: "The artist usually delivers a drawing one and a half or twice the size it is finally going to be reproduced. The art may look as if it can stand the reproduction. But many times after the engraving is finished, it appears obvious that the weight of the line or the closeness of the lines isn't correct. The only thing to do in such case is to go back to the original art work, correct it, and make a new drawing. The large size original art work can't be expected to do double duty by being right for a 3 col. advertisement if it was originally prepared for a key size many columns wider."

PIA Leader Urges Steps

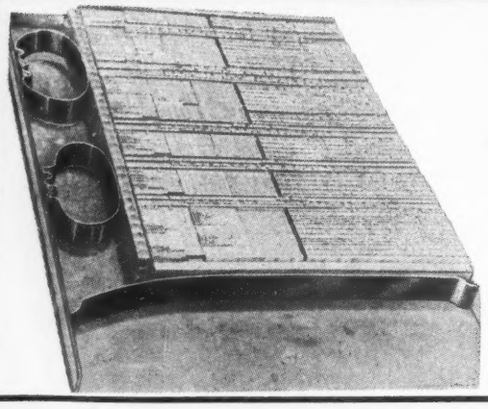
James F. Newcomb, president of Printing Industry of America, in a speech before the Graphic Arts Association of Illinois, declared that the paper shortage is a world problem. It will continue for several years and requires planning on an international level for its solution.

Newcomb called for the cooperation of newspapers, magazines and commercial printers in seeking a fundamental solution of the world's wood, pulp and paper supply problems.

He urged the commercial printing industry to take the leadership in calling together groups of paper users to develop a coordinated program to encourage the production and better distribution of paper.

According to Newcomb, the United States and Canada today are producing a normal prewar volume of paper. But the demand for paper exceeds the supply by 30 to 50 per cent.

CUT PRODUCTION COSTS WITH RIEHLOCK GALLEY LOCKS



SAVE 90% OF TIE-UP TIME
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PERFECT PROOFS
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MADE IN ALL SIZES
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GUARANTEED FOREVER

Width of Galley	Price per Hundred	Width of Galley	Price per Hundred
3½ inch	$ 8.00	10 inch	$12.00
26½ pica	10.00	10½ inch	12.00
6¼ inch	10.00	12 inch	15.00
7½ inch	12.00	17¼ inch	23.00
8¾ inch	12.00	19½ inch	26.00

Size	GALLEY SIDE LOCK	Price per Hundred
8 inch		$ 8.00
12 inch		12.00

Prices 20% higher in smaller quantities.
PRICES ON OTHER SIZES OR INFORMATION UPON REQUEST.

RIEHL GALLEY LOCK CO., INC.
1312 ONTARIO ST., CLEVELAND 13, OHIO

if YOU TAKE PRIDE IN YOUR WORK

YOU WILL LIKE

CHALLENGE

→ HI-SPEED QUOINS

Six Standard Sizes

For now, when you turn the key the new, improved indicator at all times clearly shows the register position. This means you can always duplicate the exact register position no matter how many times the form is unlocked and locked.

The new Style HM, Challenge Hi-Speed Quoins SAVE UP TO TWO-THIRDS of the lock-up time necessary with ordinary quoins. Two do the work of four to eight ordinary quoins — and more accurately. Rust-proof plated steel — self contained. Details and prices on request.

BUY MORE VICTORY BONDS! 544

THE CHALLENGE MACHINERY CO.

"Over Fifty Years in the Service of the Graphic Arts"

MAIN OFFICE AND FACTORY: GRAND HAVEN, MICH.

Printing in the 16th century... from an early engraving . . .

"20 Impressions per Hour!"

SOUNDS ridiculous . . . yet 20 impressions per hour was considered good press production in the 16th century. Today it's a different story. With speed and quality a must — successful printing has to have equipment and materials that excel.

Cromwell special prepared *Tympan* answers all modern requirements with complete satisfaction. It has absolute uniformity, high tensile strength and predetermined give. It's proof against moisture, oil and ink solvents.

Cromwell special prepared *Tympan* is now, as always, unconditionally guaranteed. Write for *free* working sample, giving size and make of your press.

CROMWELL
SPECIAL PREPARED
TYMPAN

THE CROMWELL PAPER COMPANY
4801-39 So. Whipple St., Chicago 32, Illinois

53 Years . . .

of highly specialized experience goes into the manufacture of the

CUSHMAN (OFFSET) MOTOR

for Linotype and Intertype machines.

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It's performance results from a tradition of solid New England craftsmanship.

Cushman Motor Division

LINOTYPE PARTS COMPANY

WEATHERLY, PENNA.

OHIO KNIVES

O.K. BLACKARROW PAPER TRIMMING KNIVES

give 25 to 40% longer service

Give better cutting at lower cost—proven under severe test in America's largest paper mills and printing plants. Made of a new alloy to withstand heavier cutting and still hold a keen edge for long runs. Ground with a slight concave and taper on the face for clearance—smooth cutting.

Write today for our new catalog giving complete information on O. K. BLACKARROW paper trimming knives.

The **OHIO KNIFE** *Co.*

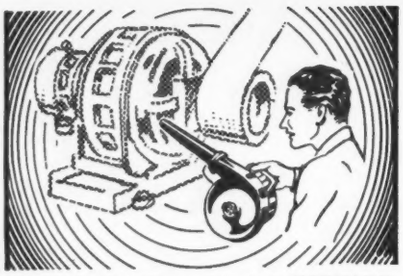
CINCINNATI 23, OHIO, U.S.A.

QUICKER CLEANUPS

at Lower Cost with the

TORNADO

BLOWER-CLEANER



IN your all-out-defense against dust danger and damage, use the TORNADO. Gets dust, dirt and lint *all out* of motors, linotypes, presses, folders. Makes motors and machines last longer. Also convertible for vacuum-cleaning of shelving, paper stock and type cases. Adaptable for spraying paint and insecticide. Keep your costs down — your profits up — by keeping your plant clean with a TORNADO.

Write for details and Free Trial Offer!

TAKE THE DUST OUT OF DUSTRY with BREUER'S BALL BEARING TORNADO PORTABLE ELECTRIC BLOWER

BREUER ELECTRIC MFG. CO.
5114 N. Ravenswood Ave., Chicago, 40

It is NEW — It Is BETTER

★ DEEPMOLD CREEPER ★

The most advanced development in molding creepers—the Deepmold Creeper—molds exceptionally deep bolsters, gives sharp halftone reproductions, will not cut or spread column rules.

Sizes	Prices
20 x 24 x 1/16"	$3.50 ea.
21 x 25 x 1/16"	3.65 ea.
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Place a trial order today

EASTERN NEWSPAPER SUPPLY
9603 Northern Blvd., CORONA, L. I., NEW YORK

Use the P-Double-E Reference Issue, consult it often for information respecting sources of all kinds of Graphic Arts Equipment and Supplies.

Typical Craftsmen's Technical Meeting — At the January 16 meeting of the Minneapolis Club of Printing House Craftsmen, a goodly number of members and their guests attended. Shown in the illustration at the speakers' table are (left to right): Ed Metro, vice president; Fred J. Landon, Dunwoody Institute, Minneapolis, who spoke on *Printing Education Week;* Ira J. Hoffman, Eastman Kodak Co., spoke on *Photography and Its Relation to the Printing Trade;* Nels Lundell of the Lund Press, Inc., and president of the Minneapolis Club; Secretary-Treasurer Robert L. Muir. In the illustration, Mr. Hoffman holds aloft a photo while discussing contrasty and brilliant photo copy. He also emphasized that photographers are well equipped to do good work and printers should accept nothing but perfection in copy.

New Color Folder

The Eagle Printing Ink Co. has issued a new color folder entitled "U. S. Regional Color Preferences." It discusses the effect sunlight has on the selection of color. A map that shows the percentage hours of sunlight in different parts of the country is a feature of this folder.

This is color folder No. 19 in the Color Fact series. Copies may be secured from the Eagle Printing Ink Co., or *Printing Equipment Engineer* will be glad to pass along your request.

GE Adds Three Divisions

To obtain more comprehensive industrial application engineering coverage, three new divisions have been added to the General Electric Company's Industrial Engineering Division, it was recently announced by J. D. Wright, manager of the divisions. The new divisions are: Power Electronics, Materials Handling & Testing Equipment, and Rubber & Printing. Of interest to the printing industry is the establishment of the Rubber & Printing Division. Under the direction of C. W. Knapp, this division will handle rubber processing and all branches of the printing industry. Mr. Knapp, who was graduated from Rennselaer Polytechnic Institute in 1936, joined General Electric in that year as a student engineer, was transferred to the Industrial Control Engineering Division in 1937, and in 1938 became a member of the Industrial Engineering Divisions, where he has remained since.

HERRICK Inks

For BEST RESULTS ON YOUR PRESSES

For clear, legible impressions, absence of light or dark spots and smudged areas... HERRICK INKS are "made-to-order". Actually, they *are* made to order, from formulas based upon specific, individual press room conditions. Let HERRICK "custom-tailor" an ink to match *your* letterpress and lithographic requirements.

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MAIN OFFICE & PLANT • EAST RUTHERFORD, NEW JERSEY

ENGINEERING FOR THE PRINTER & PUBLISHER

New Buildings . . . Modernization
Alterations . . . Surveys

ROBERT W. DICKERSON
508 ERIE BLDG., CLEVELAND 15, OHIO

Division of Maier & Walsh & Dickerson & Associates . . . ARCHITECT-ENGINEERS

PRINCIPLE
AND INTERESTS

That they must serve your best interests is the principle on which Johnson Inks are made . . . another reason for their high quality.

CHARLES ENEU Johnson AND COMPANY
GOOD INKS SINCE 1804

10th and Lombard Streets, Philadelphia, Pa.

New York • Chicago • Boston • St. Louis • Cleveland • Detroit
Baltimore • Kansas City • Pittsburgh • Atlanta • Dallas

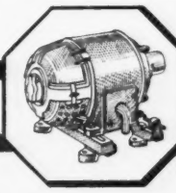
LASTING IMPRESSIONS
because . . .

You know our salesmen. They are always at your service.

WOOD FLONG CORPORATION
HOOSICK FALLS, N. Y.
NEW YORK CITY OFFICE:
551 FIFTH AVENUE, NEW YORK 17, N. Y.

MAYBE YOUR GIRLS WOULD SMILE TOO —IF THEY WERE USING
SYNTRON
"Vibrating"
PAPER JOGGERS
We'll be glad to send you literature
SYNTRON CO.
577 Lexington, Homer City, Pa.

KIMBLE
CUSTOM-BUILT MOTORS



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Division of Miehle Printing Press & Mfg. Co.
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DISTRIBUTED BY AMERICAN TYPE FOUNDERS

★ STAR CUT CEMENT ★

For Mounting

CUTS...STEREOTYPES...ELECTROTYPES

65c per tube-$5.25 per doz. $5.00 per doz. in two doz. lots, $4.00 per doz. in gross lots.

★ STAR CEMENT COMPANY
45 Malone Avenue, BELLEVILLE 9, N. J. ★

BUY AND SPECIFY "AMERICAN"

SYNTHETIC and COMPOSITION ROLLERS
Built for Longer Wear — Better Presswork
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SAFETY·RELIABILITY·ECONOMY

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PRESS DRIVES
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Dispose of your surplus equipment NOW!
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RICHARDS Saws SINCE 1910

"MULTIFORM"
"ELECTROMATIC"
"DOMORE" "CLIPPER"
SAWS — ROUTERS — DIES
J. A. RICHARDS CO., Kalamazoo, Mich.

THIS BOOKLET...
will help you choose the right Proving Equipment

Contains twenty-five illustrations and brief descriptions of Vandercook Proof Presses, Block Levellers and Gauges—enabling you to compare one with another, and thus determine which best suits your needs.
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900 N. Kilpatrick Ave., Chicago 51, Ill.

VANDERCOOK
PROOF PRESSES · BLOCK LEVELLERS
PREMAKEREADY EQUIPMENT

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This is your 1946 Reference Book!

Because the twelfth annual edition of PRINTING EQUIPMENT Engineer "Where To Buy" Printing Equipment and Supplies reference issue is a great reference book, we take pride in publishing it.

The 1946 issue certainly is the most informative printing equipment and supplies publication in the industry this year. It has 242 total pages; 109 pages of advertising of leading equipment and supply manufacturers (exclusive of paper); it has 95 pages of closely set index material. On press advertising alone there are 30 pages representing nearly every printing press manufacturer of any size in the country. More than that this book has the only condensed equipment specifications section and it has a valuable press specifications section. And to make it even more convenient and useful for you we bound it in heavy covers with convenient plastic binding.

It is your book, keep it, use it frequently and when writing to the advertisers be sure to mention you saw their advertisement or listing in this PRINTING EQUIPMENT Engineer reference issue. If you would like extra copies, they may be had while they last at a cost of $1.00 each.

PRINTING EQUIPMENT *Engineer*

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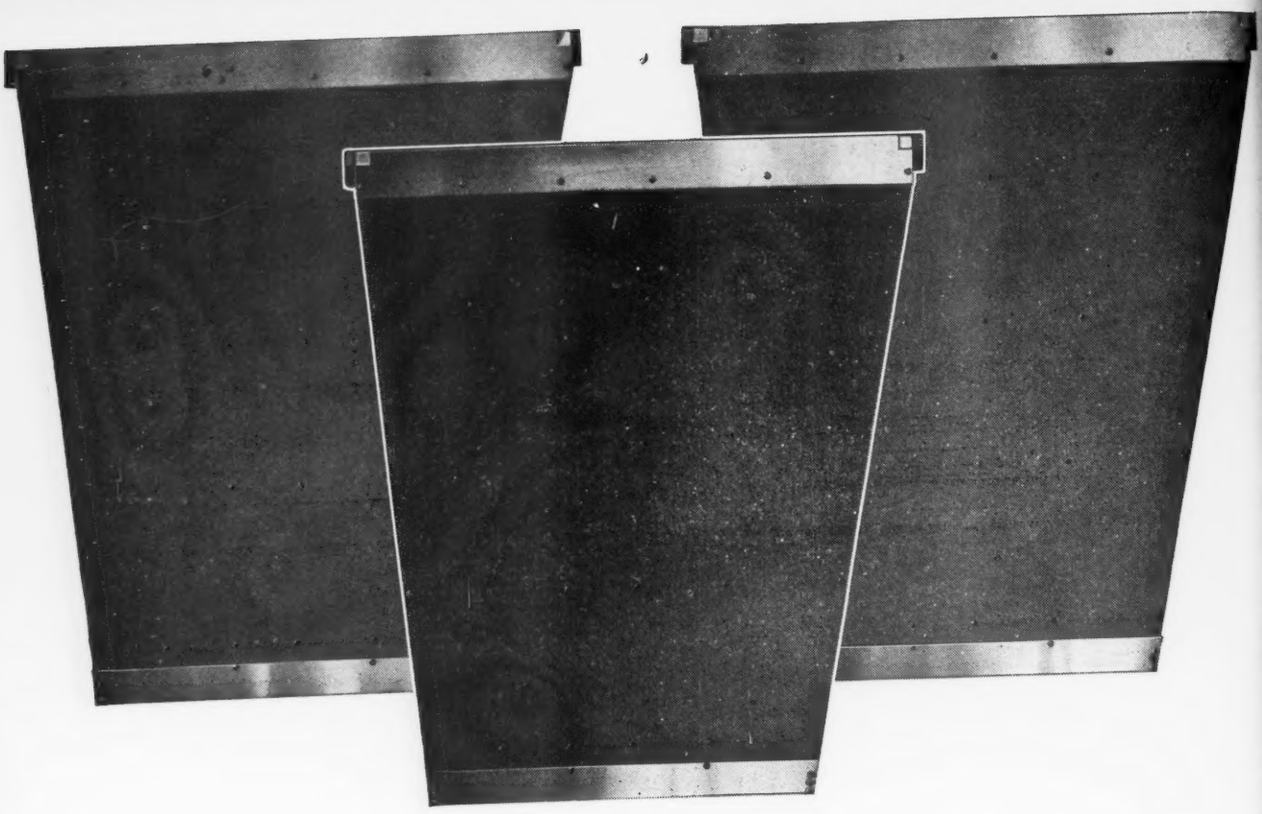

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